**Planning and Scheduling Confidence Test - EOC3**

Test Objectives:
The main objective of this test is to verify that the EOC can produce an integrated schedule of activities for instruments and spacecraft subsystems, and generate the ground scripts and command loads necessary to implement the scheduled activities. The test will demonstrate that the EOC can perform the following planning and scheduling functions:
- Long Term Plan ingest and/or access
- FDD planning and scheduling product ingest
- Activity, Baseline Activity Profile (BAP), and constraint definition
- General scheduling
- ASTER scheduling
- What-If scheduling
- Microprocessor, Flight Software (FSW), Table, and Relative Time Sequence (RTS) load generation and load uplink scheduling
- TDRSS contact scheduling
- Detailed Activity Schedule (DAS) creation, Absolute Time Command (ATC) load generation, and ATC load uplink scheduling
- Late change/Target of Opportunity (TOO) scheduling

Test Configuration:
Hardware and software configurations at each ECS site are managed and tracked by the M&O organization at that site. The most current system configuration will be obtained prior to the start of testing and noted in the test procedures.
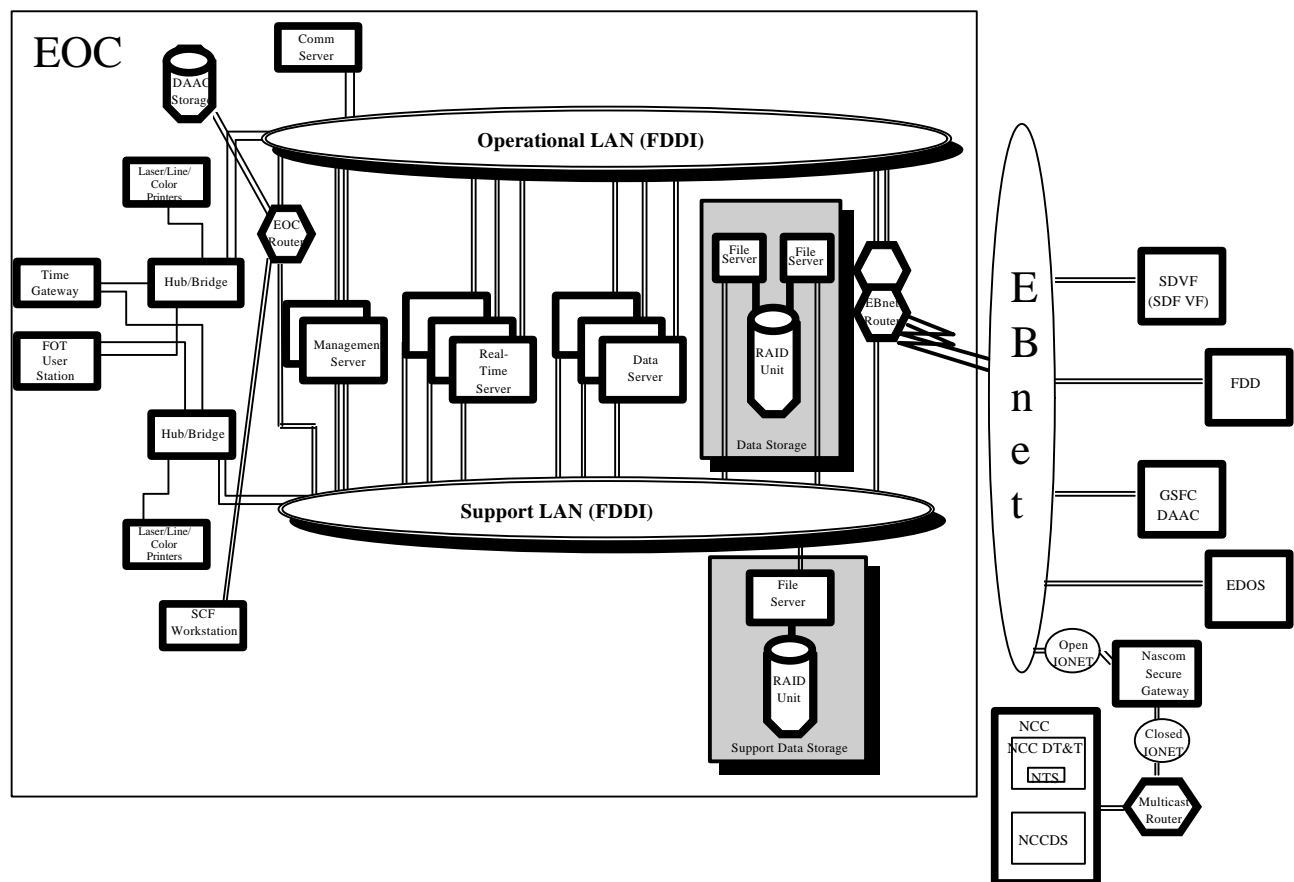
Participants and Support Requirements:
Participants:
EBnet,
EDOS M&O,
GSFC DAAC M&O,
I&T Test Conductor,
NCC M&O, (Dec 97)
SDVF (SDF VF) M&O

Communications:
    Voice:
        SCAMA 72   EOC, NCC
        SCAMA 264 EOC, SDVF (SDF VF)
        SCAMA **??**   EOC, ISTs
        CCL 74   EOC, EDOS
        CCL 94   EOC, EDOS, ETS
        CCL **??**   EOC, GSFC DAAC

    Data:
        EBnet circuit from EOC to FDD workstation
        EBnet circuit from EOC to GSFC DAAC
        EBnet circuit from EOC to EDOS

EBnet circuit from EOC to SDVF (SDF VF)

EBnet - Open IONET - Nascom Secure Gateway - Closed IONET - Multicast Router - NCC circuit

EBnet - GSFC Router - Tokyo Router - ADN - ECS IST - ASTER ICOS circuit

EBnet - NSI circuit from EOC to CERES, MISR, MODIS, and MOPITT ISTs

IP addresses:

EOC Operational LAN	198.118.199.0
EOC Support LAN	198.118.200.0
NCC	TBD
EDOS FLP	225.2.7.10
ASTER	TBD

Equipment and Software:

Hardware:

FDD workstation

GSFC DAAC

EDOS Version 3

SDVF (SDF VF)

NCC Test System (NTS) or NCC Data System (NCCDS)

ECS IST, ASTER ICOS

CERES, MISR, MODIS, and MOPITT ISTs

FOS Release B Hardware

Software:

FDD Software

GSFC DAAC Software

EDOS Version 3 Software

SDVF (SDF VF) Software

NTS or NCCDS Software

ECS IST Software, ASTER ICOS Software

CERES, MISR, MODIS, and MOPITT ISTs Software

FOS Release B Software

Test Tools:

NCC Development, Test, and Training (NCC DT&T) System

Test Data:

Description/Characteristics	Source	File/Script Name & Location

Description/Characteristics	Source	File/Script Name & Location

FDD Planning and Scheduling Products
    OMNI to TDRSS Viewing Times
    HGA to TDRSS Viewing Times
    OMNI to Ground Station Viewing Times
    HGA Gimbal Angles
    Predicted EOS-AM Ephemeris
    Orbit Adjust Maneuver Request
    Predicted Orbital Events
    Planned Orbit Maneuver Dataset
    Solar/Lunar Azimuth and Elevation Angles
    Solar Beta Angles
    Predicted Local Sun Time
    Lunar Beta Angles
    MODIS/MISR Sun/Moon FOV Events
    MODIS/MISR Planet/Star FOV Events
    Predicted Sub-Satellite Point Dataset
    Predicted Spacecraft Altitude
    Predicted Spacecraft Day/Night Length
    SLP Ephemeris
    X-Band Interference Times
    Apogee/Perigee Altitude File
    Predicted Orbit Number and Time Dataset
    Predicted Instrument Orbit Events
    X-Band Ground Station Contact Times
    MODIS FOV Target View Period
	FDD workstation	

Products sent from EOC to ASTER: Orbit data anomaly notifications Repair orbit & attitude data	FDD	
Products sent from EOC to GSFC DAAC: Orbit data anomaly notifications Repair orbit & attitude data	FDD	
Instrument activity definitions (for ASTER, CERES, MISR, MODIS, and MOPITT)	IOTs	
Instrument BAPs (one each for CERES, MISR, MODIS, and MOPITT)	IOTs	
Instrument constraint definitions	IOTs	
ASTER Short Term Schedules (STSs)	ASTER IOT	
ASTER One Day Schedules (ODSs)	ASTER IOT	
ASTER Request for EOC Schedules	ASTER IOT	
Instrument microprocessor loads in binary format (one each for CERES, MISR, MODIS, and MOPITT)	IOTs	
Flight software load in binary format	SDVF (SDF VF)	
FDD table load in ASCII format	FDD workstation	

Test Case Descriptions:

EOC3.1   Deleted

The Long Term Planning test case has been deleted and the requirements reassigned or considered not testable. Long term planning does not directly involve FOS software processing beyond the ability to ftp files.

EOC3.1 was originally intended to:

Verify that the EOC can ingest and/or access long term plans. The EOC will ingest and/or access the LTSP from the project scientist and the IWG. The EOC will also ingest and/or access an LTIP from each PI/TL and the project scientist. The EOC will generate a long term spacecraft operations plan based on the LTSP, LTIPs, and other spacecraft activities that have potential to impact mission operations.

EOC3.2   **FDD Planning and Scheduling Products**

This test case verifies that the EOC can ingest FDD planning and scheduling products from the FDD workstation via ftp. The EOC will display an event message notifying the user that new FDD data has been received and the ingested products will be displayed on the mission timeline. The EOC will automatically make these products available to ASTER and the GSFC DAAC via ftp.

Requirements to be Verified:
EOC-1005#B
EOC-2010#B
EOC-2030#B
EOC-3017#B

EOC3.3   **Activity, BAP, and Constraint Definition**

This test case verifies that activities, BAPs, and constraints can be defined for instruments and spacecraft subsystems. Activities for the ASTER, CERES, MISR, MODIS, and MOPITT instruments will be defined via the ISTs. Activities for spacecraft subsystems will be defined via the EOC. Activities will contain commands, offset times relative to activity start and stop, modifications to command parameters, mode transitions, complex activities, ECL directives, and command procedures. BAPs for the CERES, MISR, MODIS, and MOPITT instruments will be defined via the ISTs. BAPs will contain activities, offset times, and modifications to command parameters. Instrument and spacecraft subsystem command constraints will reside in the PDB prior to the test, however activity constraints will be defined via the ISTs and the EOC during the test.

Requirements to be Verified:

EOC-2030#B	EOC-2190#B	EOC-2240#B	EOC-2480#B
EOC-2070#B	EOC-2200#B	EOC-2270#B	EOC-2482#B
EOC-2170#B	EOC-2210#B	EOC-2272#B	
EOC-2180#B	EOC-2220#B	EOC-2460#B	

EOC3.4   **General Scheduling**

This test case verifies that activities, BAPs, commands, and command procedures representative of a nominal day can be scheduled against the master plan of the mission timeline. The items above will be scheduled in impact, no impact, and no impact with oversubscription modes. The items will be scheduled with start and stop time combinations of absolute times, orbital event times, and durations. Hard and soft constraint violation information will be displayed on the timeline.

Requirements to be Verified:

EOC-2030#B	EOC-2190#B	EOC-2240#B	EOC-2310#B	EOC-3024#B
EOC-2070#B	EOC-2200#B	EOC-2280#B	EOC-2320#B	
EOC-2170#B	EOC-2210#B	EOC-2290#B	EOC-2350#B	
EOC-2180#B	EOC-2220#B	EOC-2300#B	EOC-2540#B	

EOC3.5 ASTER Scheduling

This test case verifies that the EOC can support ASTER scheduling. The ECS IST will ingest ASTER STSs in schedule and analysis (what-if) modes. After constraint checking, the activities in the schedule mode STS will be scheduled on the master mission plan. A Preliminary Resource Schedule (PRS) will be generated and transmitted to the ASTER ICC via the ECS IST. The activities in the analysis mode STS will be scheduled against a what-if plan. A PRS will be generated and transmitted to the ASTER ICC via the ECS IST. The ECS IST will ingest ASTER ODSs in schedule and analysis (what-if) modes. After constraint checking, the activities in the schedule mode ODS will be scheduled on the master mission plan. An Activity Schedule (ACS) will be generated and transmitted to the ASTER ICC via the ECS IST. The activities in the analysis mode ODS will be scheduled against a what-if plan. An ACS will be generated and transmitted to the ASTER ICC via the ECS IST. The ECS IST will ingest a Request for EOC Schedules. The ECS IST will generate an ACS for all subsystems and instruments for the requested timeframe and send it to the ASTER ICC.

Requirements to be Verified:

EOC-2030#B	EOC-2190#B	EOC-2240#B	EOC-2300#B	EOC-2480#B
EOC-2070#B	EOC-2200#B	EOC-2260#B	EOC-2310#B	EOC-2540#B
EOC-2170#B	EOC-2210#B	EOC-2280#B	EOC-2320#B	
EOC-2180#B	EOC-2220#B	EOC-2290#B	EOC-2350#B	

EOC3.6 What-If Scheduling

This test case verifies that the EOC can perform what-if scheduling. Activities, BAPs, commands, and command procedures will be scheduled against a what-if plan of the mission timeline. The items above will be scheduled in impact, no impact, and no impact with oversubscription modes. The items will be scheduled with start and stop time combinations of absolute times, orbital event times, and durations. Hard and soft constraint violation information will be displayed on the timeline . Activities will be cut and pasted between the what-if plans and the master plan.

Requirements to be Verified:
EOC-2260#B

EOC3.7 Microprocessor, FSW, Table, and RTS Load Generation and Uplink Scheduling

This test case verifies that the EOC can generate and schedule uplink times for microprocessor, FSW, table, and RTS loads. Instrument microprocessor load contents files (in binary format) from the CERES, MISR, MODIS, and MOPITT ISTs will be ingested and validated. The microprocessor uplink loads, the load reports, and the load image files will be generated, and the load catalog will be updated. The microprocessor loads will be scheduled for uplink. A FSW load contents file (in binary format) from the SDVF (SDF VF) will be ingested and validated. The FSW uplink load, the load report, and the load image file will be generated, and the load catalog will be updated. The FSW load will be scheduled for uplink. A table load contents file (in ASCII format) from FDD will be ingested and validated. The table uplink load, the load report, and the load image file will be

generated, and the load catalog will be updated. The table load will be scheduled for uplink. A RTS load contents file will be generated and validated at the EOC. The RTS load, the load report, and the load image file will be generated, and the load catalog will be updated. The RTS load will be scheduled for uplink.

Requirements to be Verified:

AM1-0270#B	EOC-3050#B	EOC-3160#B	EOC-4010#B
EOC-3015#B	EOC-3070#B	EOC-3200#B	
EOC-3020#B	EOC-3086#B	EOC-3210#B	
EOC-3030#B	EOC-3090#B	EOC-3240#B	

EOC3.8   TDRSS Contact Scheduling

This test case verifies that the EOC can formulate and submit TDRSS schedule requests. Following schedule submission, the NCC will respond with schedules or notifications of rejection along with the reasons for rejection. The schedules will be displayed on the master plan of the mission timeline. The EOC will automatically transfer the schedules to EDOS via ftp. The ISTs will access the scheduled contacts via the timeline.

Requirements to be Verified:

EOC-2030#B	EOC-2200#B	EOC-2280#B	EOC-2350#B	EOC-2420#B
EOC-2070#B	EOC-2210#B	EOC-2290#B	EOC-2370#B	EOC-2540#B
EOC-2170#B	EOC-2220#B	EOC-2300#B	EOC-2400#B	EOSD1520#B
EOC-2180#B	EOC-2240#B	EOC-2310#B	EOC-2405#B	EOSD1530#B
EOC-2190#B	EOC-2250#B	EOC-2320#B	EOC-2410#B	

EOC3.9   DAS Creation and ATC Load Generation

This test case verifies that the EOC can generate a conflict-free DAS and a corresponding ground script and ATC load. For the first DAS/ATC attempt, the schedule will contain hard constraint violations, therefore, the DAS/ATC will not be generated. The user will be notified of the hard constraint violation information. The hard violations will be corrected on the timeline and the user will attempt to generate the DAS/ATC again. The user will be notified of all soft constraint violations. After the user approves the soft violations, the DAS/ATC will be generated. The binary ATC load, the ATC load report, and the integrated report will be generated, and the load catalog will be updated. The DAS will be sent from the ECS IST to the ASTER ICC. The DAS will also be sent from the EOC to the GSFC DAAC. All ISTs will access the ATC load report and the integrated report. The ATC load partitions will be scheduled for uplink.

Requirements to be Verified:

EOC-2030#B	EOC-2200#B	EOC-2490#B	EOC-2550#B	EOC-3160#B
EOC-2160#B	EOC-2210#B	EOC-2510#B	EOC-2620#B	EOC-3200#B
EOC-2170#B	EOC-2220#B	EOC-2520#B	EOC-3050#B	EOC-3210#B
EOC-2180#B	EOC-2240#B	EOC-2530#B	EOC-3070#B	EOC-3240#B
EOC-2190#B	EOC-2350#B	EOC-2540#B	EOC-3086#B	EOC-4010#B

EOC3.10   Late Change/TOO Scheduling

This test case verifies that the EOC can accept late changes via the ISTs and update the DAS/ATC accordingly. The portion of the master plan of the mission timeline corresponding to the late changes will be unlocked, the late changes will be incorporated, and constraint checks will be

performed. Additional TDRSS schedules will be requested if necessary to account for the late changes. An updated DAS and ATC load will be generated for the late changes.

Requirements to be Verified:

EOC-2520#B	EOC-2570#B	EOC-3226#B	ICC-3070#B
EOC-2530#B	EOC-2590#B	ICC-2350#B	ICC-3071#B
EOC-2540#B	EOC-2620#B	ICC-2370#B	ICC-3085#B
EOC-2555#B	EOC-3225#B	ICC-2380#B	

Test Procedures:

Test Set-up:

Step	Station	Action	Expected Results	Comments
1.	EOC	If the Data Server (**DS**) and Real Time Server (**RTS**) are running, skip to step *23* to start a User Work Station (**UWS**).		
2.	EOC	Log onto the Data Server at the Data Server console: **IVVTEST**. Enter password: **IVVTEST1**.	UNIX CmdTool window(s) open. Note: Startup and shutdown procedures can be found in the Operations Tools Manual section 4.2.4.	
3.	EOC	Open two Xterm windows **Xterm -n DataServer &** *(optional)* **Xterm &**	Two Xterm windows open. One Xterm window has a title of DataServer.	
4.	EOC	In Xterm window check endpoints on entire system: **setup** (or **cd /fosb/test/am1/scripts/setup**) **show_all.sh**	There should be "0 rows affected" if the system is down correctly. If the number is about 51 probably just the Reflectors are up (on DataServer).	
5.	EOC	As an alternative to show_all.sh, the sybase tables can be accessed via the following commands: **sql** (alias for isql -U fos_dba -P fos_dba) **use am1_fos_ops** **go** **select * from name_srvr** **go**	There should be "0 rows affected" if the system is down correctly. If the number is about 51 probably just the Reflectors are up (on DataServer).	
6.	EOC	As an alternative to using the "show" script or isql you can use Netscape: Bring up the FOS Homepage on Netscape: **netscape &**	FOS Database Access Page displayed. If not automatically displayed, check Netscape for a bookmark. If no bookmark enter the url: **http://198.118.199.20/FosDbHome.html**	

Step	Station	Action	Expected Results	Comments
7.	EOC	Verify no endpoints exist: Click on **Nameserver** Database Click on **Clear Form** Click on **Submit.**	"Total matches = 0". Note: If any endpoints exist watch for live processes/endpoints on the Data Server, Real Time Server, and on User Stations in the following steps. They must all be removed/killed prior to system startup.	
8.	DS	Check for live processes and Reflectors. **setup** **ps -aux**	Current processes will be displayed along with owner. Note: can also use "ps -ea"	
9.	DS	Kill all undesirable processes - Processes with a /fosb/test/am1/bin/… prefix and owner is not "root" (there may be others). Be cautious of processes with names like FmCwControlWindow or FdEvEventHandler. For Reflectors see next step. Initially, as process owner, use **MyKill** to shutdown the process. If processes are still active use **kill -2 "pid"** for each active process, then use kill -9 "pid" for each undesirable process. Type **ps -aux** again to verify.	The user may need to be logged in as the owner of the processes in order to kill them.	
10.	DS	If Reflector processes exist kill them and recheck processes: **rkill** **ps -aux** **rm_all.sh** **show_all.sh**	rkill is a script created by Diane Womack.. ps - no undesirable processes should be alive rm - Removes all endpoints in mame_srvr. show - number of rows affected = 0	
11.	DS	In the "DataServer" Xterm source the DataServerStartup shell script from directory: /fosb/test/am1/scripts/setup. **setup** **source DataServerStartup**	The script will take 2- 3 minutes to complete. Reflectors added about 12 minutes after DS completion.	

Step	Station	Action	Expected Results	Comments
12.	DS	Observe in the UNIX window: "Resource Model done loading Pools."	If this message is not displayed, first wait a little longer, while waiting check the number of processes on the Data Server via show.sh (or netscape). Most likely cause of failure is the presence of processes/endpoints prior to startup of Data Server. If startup appears unsuccessful , perform next step to check for processes.	
13.	EOC	In the xterm window, check number of processes on DataServer: **show.sh** **show_all.sh** If using Netscape: From Netscape, verify that *81* endpoints are now found by submitting a blank form. **Back** **Submit**	<u>show</u> - number of rows affected = 81 <u>show_all</u> number of rows affected = 132 (81 processes plus 51 Reflectors) If the number of endpoints does not equal 81, be sure startup has completed, if so, type **MyKill**, in Data Server's UNIX window, recheck for processes on all servers, and restart. The Reflectors are needed for IST communications. If refelctors are missing or in excess no action is needed unless working with the ISTs	
14.	RTS	Log onto the Real Time Server as **IVVTEST**. Enter password: **IVVTEST1**	Successful login to Real Time Server.	

Step	Station	Action	Expected Results	Comments
17.	RTS	Kill all undesirable processes - Processes with a /fosb/test/am1/bin/… prefix and owner is not "root" (there may be others). Be cautious of processes with names like "FmCwControlWindow". Initially, as process owner, use **MyKill** to shutdown the process. If processes are still active use **kill -2 "pid"** for each active process, then use kill -9 "pid" for each undesirable process. Type **ps -aux** again to verify.	The user may need to be logged in as the owner of the processes in order to kill them.	
18.	RTS	Change directory and check for live endpoints on Real Time Server: **setup** (or **cd /fosb/test/am1/scripts/setup**) **show.sh**	<u>show</u> - number of rows affected = 0	
19.	RTS	In the Real Time Server xterm, source the RealTimeServerStartup shell script from directory: /fosb/test/am1/scripts/setup. **setup** **source RealTimeServerStartup**	The script will take about 5 minutes to complete.	
20.	RTS	Observe in the UNIX window: For FOS version 2.0.0 : "Creating a ptp coupler"	Note: For FOS version 2.0.0, wait for "Creating a ptp coupler" There should not be any 'FORMAT Problem xxx -socket error'. This is an indication that endpoints existed prior to startup.	The completion status and endpoint count are subject to change.

Step	Station	Action	Expected Results	Comments
21.	EOC	Check number of processes on DataServer: **show.sh** If using Netscape: From Netscape, verify that 33 endpoints are now found by submitting a form specifying the RTS. **Back** **<RTS name>** in Entry ID field **Submit**	show - number of rows affected = 33 If the number of endpoints does not equal 33, be sure startup has completed, if so, type **MyKill**, in RealTimeServer's UNIX window, recheck for processes on all servers, and restart. DataServer can be left up, if processes are correct.	
22.	EOC	Leave Data Server and Real Time Server windows open to view statuses.		
23.	UWS	Log onto an EOC User Work Station Enter your user name. Enter your password.	CmdTool windows open. *NOTE*: UWS can be brought up anytime after DataServer is running. If UWS is up prior to completion of RTS startup, the Event message "String 100 successfully created" indicates the successful completion of RTS startup.	
24.	EOC	Open Xterm windows **Xterm -n UserStation &** *(optional)* **Xterm &**	Two Xterm windows open. One Xterm window has a title of UserStation.	
25.	UWS	Change directory and check for live processes. **setup** (or **cd /fosb/test/am1/scripts/setup**) **ps -aux**	Current processes will be displayed along with owner. There should be no undesirable processes. If so, run MyKill as owner of processes. Then attempt 'kill -2 pid#'. Only use 'kill -9' is a last resort.	
26.	UWS	Check for live endpoints on User Work Station: **show.sh**	show - number of rows affected = 0	

Step	Station	Action	Expected Results	Comments
27.	UWS	In the UserStation Xterm, source the UserStationStartup shell script from directory: /fosb/test/am1/scripts/setup. **setup** **source UserStationStartup.pas** If not using Planning and Scheduling functions can source **UserStationStartup.nopas** Show.sh can be used on the UWS to verify that 9 processes exist on the UWS. (There are 9 processes at startup prior to opening FOS tools, windows, etc)	The script will take 3 - 4 minutes to complete. The following eight planning and scheduling windows will open: -Activity Recycler -BAP Definer -Activity Definer -Constraint Definer -EOS Timeline -Load_Generation -General Scheduler -Communications Contact Scheduler (CCS). A Control_Window will open last.	If CCS window does not appear, there is a Work Around available. If CCS is not needed the WA does not need to be performed.
28.	UWS	The 8 planning and scheduling windows can be Iconized.	If there are not 8 planning and scheduling icons and the Control Window, first wait a little longer; while waiting check the number of processes on the user station via show.sh. Correct number of user station endpoints is 9 with PAS (8 w/o) If unsuccessful startup, type **MyKill**, in user Station's UNIX window, kill undesirable processes, and restart user station only. If still unsuccessful call for help, you'll probably perform a complete shutdown and restart!	
29.	UWS	Bring up Event_Display window. Click on "**Tools…**" button in Control Window, select **Event_Display_Global** and **OK**.	Event_Display may take a few minutes to appear.	
30.	UWS	Issue the ECL directive to connect to string 100: **STRING CONNECT STRING=100 CONFIG= MIRROR**	Event message: "Successfully connected to String 100." Approximately a 2- 3 minute wait.	

Step	Station	Action	Expected Results	Comments
31.	UWS	From a UNIX window, different from the window used for User startup, run the SI&T userstation configuration recording script: *TBD*	This can be done while waiting for the string to connect! Creates a file called testconfig.	
32.	UWS	From the UNIX window, rename the testconfig file. *TBD*		
33.	UWS	Record the system configuration. Identify other pertinent configuration information at the bottom of this page. Enter N/A if Not Applicable.	FOS LAN: _____ UWS: _____ FOS version: _____ PDB version: _____ EDOS version: _____ MPS version: _____ HRS version: _____	
34.	UWS	Enable telemetry data archiving. **ARCHIVE TLM = ENABLE <tlm TYPE>**	An event message stating that telemetry archiving is enabled.	

Other pertinent configuration information (eg; DS, RTS, other UWS, concurrent activities, etc):

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Test Execution:

EOC3.1   Long Term Plans has been deleted

EOC3.2   FDD Planning and Scheduling Products

Step	Station	Action	Expected Results	Comments
1.	EOC	Verify that all FDD products have been ingested via ftp from the FDD workstation	The FDD products reside in the appropriate directory at the EOC	- list of necessary FDD products to verify is included in Test Data section
2.	EOC	Verify FDD orbital products are made available to ASTER and the GSFC DAAC via ftp	The FDD products transferred to ASTER and the GSFC DAAC and reside in the appropriate directory	- list of products that go to ASTER and GSFC DAAC is included in Test Data section

EOC3.3   Activity, BAP, and Constraint Definition

Activity:

 RESOURCE: AM1 , ACTIVITY TYPE: Standard,
 Select commands w/relative offset times (ground & ATC commands)
 Modify the command submnemonics
 Edit Mode Transitions
 Edit Complex Activities
 Edit ECL Directives
 Edit Command Procedures
 Edit Scheduling Information
 Enter an Activity Description
 Save Activity
 Repeat for each activity Defined in Appendix C (Instrument and Spacecraft)

BAP:

 Include activities
 modify command submnemonics
 scheduling information
  Start Time, Duration, Frequency
 Save BAP

Constraint Definer

 Activity/Mode/Event
 Soft/Hard
 Type: nbd, bdd, nswpa, swpa, newp, ewpa

Step	Station	Action	Expected Results	Comments
1.	EOC	Bring up the General Scheduler window: click on the Tools button on the Control window, select Planning and Scheduling from the Tool Type option menu, and select General Scheduler	General Scheduler window is displayed	

Step	Station	Action	Expected Results	Comments
3.	EOC	Bring up the Activity Definer window: click on the Tools button on the Control window, select Planning and Scheduling from the Tool Type option menu, and select Activity Definer	Activity Definer window is displayed	
4.	EOC	Using the Activity Definer window, define the following instrument activities: See EOC3 Appendix C for activities.	Activities are defined which incorporate ground and ATC commands, relative times for the commands, modifications to command parameters, mode transitions, ECL directives, procedures, and complex activities	Steps 6-25 use the Activity Definer window
5.	EOC	Define the following spacecraft subsystem activities: See EOC3 Appendix C for activities.	Activities are defined which incorporate ground and ATC commands, relative times for the commands, modifications to command parameters, mode transitions, ECL directives, procedures, and complex activities	
6.	EOC	Define a new activity: click on the Activity Definer File menu and select New	New window is displayed	
7.	EOC	Enter EOC3_*RESOURCE*_ACT_# _FR for the activity name, select AM1*RESOURCE* as the resource, select Standard as the Activity Type, and click OK	New window is no longer displayed, activity name and resource name appear in the window	
8.	EOC	Incorporate commands into the activity: click on the Activity Definer Modify menu and select Commands	Commands window is displayed	
9.	EOC	Select each command from the Available Commands list, enter the offset time, and click Add	The commands are displayed in the Selected Commands portion of the Commands window	
10.	EOC	Click Apply and then click OK	Commands window is no longer displayed, commands appear in the Items portion of the Activity Definer window	
11.	EOC	Edit command parameters: click on the Activity Definer Modify menu and select Parameters	Parameters window is displayed	

Step	Station	Action	Expected Results	Comments
12.	EOC	Select the command from the Commands list, click on the parameter from the Parameters list, enter a valid value, and click Apply and OK	Parameters window is no longer displayed, command parameters are displayed in the Items portion of the Activity Definer window	
13.	EOC	Edit mode transitions: click on the Activity Definer Modify menu and select Modes	Modes window is displayed	
14.	EOC	Select the mode from the Available Modes list, enter offset time, and click Add, Apply, and OK	Modes window is no longer displayed, mode transitions appear in the Items portion of the Activity Definer window	
15.	EOC	Edit complex activities: click on the Activity Definer Modify menu and select Complex Activities	Complex Activities window is displayed	
16.	EOC	Select the complex activity from the Available Activities list, enter offset time, and click Add, Apply, and OK	Complex Activities window is no longer displayed, complex activities appear in the Items portion of the Activity Definer window	
17.	EOC	Edit ECL directives: click on the Activity Definer Modify menu and select ECL Directives	ECL Directives window is displayed	
18.	EOC	Enter the ECL directive in the ECL Command Language Editor, enter the offset time, and click Add, Apply, and OK	ECL Directives window is no longer displayed, ECL directives appear in the Items portion of the Activity Definer window	
19.	EOC	Edit command procedures: click on the Activity Definer Modify menu and select Command Procedures	Command Procedures window is displayed	
20.	EOC	Select the command procedure from the Available Command Procedures list, enter offset time, and click Add, Apply, and OK	Command Procedures window is no longer displayed, command procedures appear in the Items portion of the Activity Definer window	
21.	EOC	Edit Scheduling Information: click on the Activity Definer Modify menu and select SchedulingInfo	Activity Default Scheduling Information window is displayed	
22.	EOC	Enter scheduling information, click Apply and OK	Activity Default Scheduling Information window is no longer displayed	

Step	Station	Action	Expected Results	Comments
23.	EOC	Click on the Activity Description box and enter an activity description: "This activity is defined for the AM1 *RESOURCE* as part of the EOC3 (dry/formal) run test.	Activity description is displayed in the box	
24.	EOC	Select Save from the Activity Definer File menu item	The activity is saved	
25.	EOC	Select Close from the Activity Definer File menu item	The activity is closed	
26.	EOC	Using the General Scheduler window, verify instrumentBAPs have been defined by the ISTs: verify that at least one BAP for each instrument (except ASTER) is displayed in the BAPs section of the General Scheduler window	BAPs include activities, modifications to command parameters, and offset times for the activities	
27.	EOC	Bring up the BAP Definer window: click on the Tools button on the Control window, select Planning and Scheduling from the Tool Type option menu, and select BAP Definer	BAP Definer window is displayed	

Step	Station	Action	Expected Results	Comments
28.	EOC	Define the following spacecraft subsystem BAPs: EOC3_ELEC_BAP_1_FR: (EPS resource) EOC3_EAS_ACT_1_FR activity EOC3_EPS_ACT_1_FR activity Edit parameter ADJUSTMENT=100 EOC3_COM_BAP_1_FR: EOC3_COM_ACT_1_FR Edit parameter Number_Steps=50 Scheduling Information: Start Time: 1999/175 00:00:00 Duration: 15 minutes Frequency: Every 2 months	BAPs are defined which include activities, modifications to command parameters, and scheduling information	Steps 29-40 use the BAP Definer window
29.	EOC	Define a new BAP: click on the BAP Definer File menu and select New	New window is displayed	
30.	EOC	Enter EOC3_*RESOURCE*_BAP_*#*_FR for the BAP name, select AM1*RESOURCE* as the resource, and click OK	New window is no longer displayed	
31.	EOC	Incorporate activities into the BAP: click on the BAP Definer Modify menu and select Activity List	Activity List window is displayed	
32.	EOC	Select the activities from the Available Activities list and click Add	The activities are displayed in the Activities within this BAP window	
33.	EOC	Click Apply and then click OK	Activity List window is no longer displayed, activities appear in the BAP Activities portion of the BAP Definer window	
34.	EOC	Edit command parameters: click on the BAP Definer Modify menu and select Command Parameters	Command Parameters window is displayed	

Step	Station	Action	Expected Results	Comments
35.	EOC	Select the activity from the Activity list, select the command from the Commands list, and select a parameter from the Parameters list	The activity, command, and parameter are highlighted	
36.	EOC	Enter valid modified parameter values, click Apply and OK	Command Parameters window is no longer displayed, command parameters are displayed in the BAP Activities portion of the BAP Definer window	
37.	EOC	Enter scheduling information: click on the BAP Definer Modify menu and select SchedulingInfo	Periodic Scheduling Information window is displayed	
38.	EOC	Select the activity from the Activity List, enter the times, and click Apply and OK	Scheduling Information window is no longer displayed, scheduling information is displayed in the BAP Activities portion of the BAP Definer window	
39.	EOC	Select Save from the BAP Definer File menu item	The BAP is saved	
40.	EOC	Select Close from the BAP Definer File menu item	The BAP is closed	
41.	EOC	Bring up the Constraint Definer window: click **Tools…**, **Constraint Definer**, **OK**	Constraint Definer window is displayed	
42.	~	Define the following constraints: EOC33_NBD_FR EOC33_BD_FR EOC33_NSWPA_FR EOC33_SWPA_FR EOC33_NEWPB_FR EOC33_EWPB_FR	Constraints of the following types are defined: "not be during", "be during", "not start within period after", "start within period after", "not end within period before", and "end within period before".	Use Constraint Definer window per OTM 8.4.2.3.1
43.	EOC	Define a new constraint: click on the Constraint Definer Modify menu and select Add Constraint	Constraint Definition window is displayed	

Step	Station	Action	Expected Results	Comments
44.	EOC	Enter the Constraint name:**EOC33_NBD_FR** left-hand resource:**AM1 MISR** Activity/Mode/Event:**Activity** Option: **MISR_ATC1.1** select **SHOULD** (soft constraint) constraint type:**not end within period before** right hand resource: **AM1 MOPITT** Activity/Mode/Event: **Mode** Option: **Idle** description:**EOC3.3 soft nbd** In the Constraint Definer menu bar select File, Save	The newly defined constraint appears in the Constraint Definer window under All Constraints.	
45.	EOC	Repeat previous step using the parameters defined in Exhibit EOC3.3-1 Constraint Definitions to define a total of six constraints.		
46.	EOC	In the Constraint Definition window click Apply and OK	Constraint Definition window is no longer displayed and the newly defined constraint appears in the Constraint Definer window under All Constraints	
47.	EOC	Modify existing constraint EOC33_nbd. Change the type from**not end within period before** to **not be during** following procedures in OTM 8.4.2.3.2	The newly modified constraint appears in the Constraint Definer window under All Constraints with the type - not be during.	Use Constraint Definer window per OTM 8.4.2.3.2
48.	EOC	Incorporate activities into the BAP: click on the BAP Definer Modify menu and select Activity List	Activity List window is displayed	
49.	EOC	Select the activities from the Available Activities list and click Add	The activities are displayed in the Activities within this BAP window	

EOC3.4   General Scheduling
Open General Scheduler
Open Timeline
   Open Master Plan
Schedule Activities -
   Impact mode
   Non- Impact
      One activity not scheduled due to conflict w/ another activity
   Oversubscription
      Two activities scheduled overlapping existing activities (Todo)
Schedule BAPs
   Impact
   Non-Impact
      One BAP not scheduled due to conflict w/ another activity
   Oversubscription
      Two BAPs scheduled overlapping existing activities (Todo)
Schedule Commands
   Impact
   Non-Impact
      One command not scheduled due to conflict w/ another activity
   Oversubscription
      Two commands scheduled overlapping existing activities
Schedule Procs
   Impact
   Non-Impact
      One proc not scheduled due to conflict w/ another activity
   Oversubscription
      Two procs scheduled overlapping existing activities

Step	Station	Action	Expected Results	Comments EOC3.4
1.	EOC	Bring up the General Scheduler window: click on the Tools button on the Control window, select Planning and Scheduling from the Tool Type option menu, and select General Scheduler	General Scheduler window is displayed	
2.	EOC	Bring up the Timeline window: click on the Tools button on the Control window, select Planning and Scheduling from the Tool Type option menu, and select Timeline	Timeline window is displayed	
3.	EOC	Click on the File menu item in the Timeline and select Open	Open Plan window is displayed	
4.	EOC	Select the Master Plan, select Start and Stop times of 1999/175 00:00:00 - 1999/176 00:00:00, and click OK	Timeline for the 1999/175 time range is displayed	
5.	~	Schedule Activities in Impact, NoImpact, and NoImpact with Oversubscription modes against the Master Plan and the what-if plan		
6.	EOC	Click on the Acts toggle button in the General Scheduler window	Activities defined in EOC3.3 are displayed in the Activities section of the window for each resource	
7.	EOC	Select the Master Plan from the Open Plans List in the General Scheduler window	Activities will be scheduled against the Master Plan	
8.	EOC	Click on the Impact toggle button	Activities will be scheduled in impact mode	

Step	Station	Action	Expected Results	Comments EOC3.4

9.	EOC	Schedule the following activities:
		
		See EOC3 Appendix C for activities.
		
		EOC3_ASTER_ACT_1_FR
		    Start Time: 1999/175 01:00:00
		    Stop Time: 1999/175 01:01:00
		EOC3_CERESF_ACT_1_FR
		    Start Time: 1999/175 02:00:00
		    Stop Time: 1999/175 02:15:00
		EOC3_MODIS_ACT_1_FR
		    Start Time: 1999/175 05:00:00
		    Stop Event: Orbit 151, Sequence 1,
		        Sunset +00:01:00
		EOC3_MOPITT_ACT_1_FR
		    Start Time: 1999/175 02:15:00
		    Duration: 5 hours
		EOC3_CDH_ACT_1_FR
		    Start Event: Orbit 152, Sequence 1,
		        Sunrise -02:00:00
		    Stop Time: 1999/175 10:00:00
		EOC3_COM_ACT_1_FR
		    Start Event: Orbit 155, Sequence 1,
		        Sunrise +03:00:00
		    Stop Event: Orbit 155, Sequence 1,
		        Sunrise +04:00:00
		EOC3_EAS_ACT_1_FR
		    Start Event: Orbit 159, Sequence 1,
		        Sunset -04:00:00
		    Duration: 15 minutes
		EOC3_EPS_ACT_1_FR
		    Start Time: 1999/175 18:00:00
		    Stop Time: 1999/175 19:00:00
		EOC3_GNC_ACT_1_FR
		    Start Time: 1999/175 23:00:00
		    Stop Time: 1999/175 23:45:00
			All activities are displayed on the Timeline for the appropriate resource and time
			6/24/99 00:59:55-01:01:05
			
			6/24/99 01:55:00-02:20:00
			Standby 6/24/99 02:00:30- 1/19/2058 03:14:06
			
			6/24/99 04:55:00-06:49:21
			Science Day 6/24/99 04:55:00- 1/19/2058 03:14:06
			
			6/24/99 02:14:30-07:16:10
			
			6/24/99 07:02:35-10:00:05
			
			6/24/99 16:54:19-18:04:19
			
			6/24/99 15:57:26-16:16:26
			
			6/24/99 18:00:00-19:00:00
			
			6/24/99 23:00:00-23:45:00
				Use Step 10 to schedule the activities

Step	Station	Action	Expected Results	Comments EOC3.4
10.	EOC	Change the resource to schedule against to *RESOURCE*, select the desired activity, enter the times, and click the Schedule button	All activities are displayed on the Timeline for the appropriate resource and time	
11.	EOC	Click on the NoImpact toggle button	Activities will be scheduled in non-impact mode	
12.	EOC	Schedule the following activities: EOC3_CERESF_ACT_2_FR Start Time: 1999/175 02:00:00 Stop Time: 1999/175 02:10:00 EOC3_MISR_ACT_1_FR Start Time: 1999/175 20:00:00 Stop Time: 1999/175 20:10:00 EOC3_PMS_ACT_1_FR Start Time: 1999/175 21:00:00 Stop Time: 1999/175 23:30:00 EOC3_TCS_ACT_1_FR Start Time: 1999/175 22:00:00 Stop Time: 1999/175 23:00:01	EOC3_CERESF_ACT_2_FR *is not displayed* on the Timeline due to the conflict with EOC3_CERES_ACT_1_FR, all other activities are scheduled 6/24/99 19:58:00-20:12:00 6/24/99 21:00:00-23:30:00 6/24/99 22:00:00-23:00:01	Use Step 10 to schedule the activities
13.	EOC	Click on the Oversubscribe toggle button.	Activities will be scheduled in non-impact with oversubscription mode	
14.	EOC	Schedule the following activities: EOC3_tbd_ACT_1_FR EOC3_tbd_ACT_1_FR EOC3_tbd_ACT_1_FR	*All* activities are displayed on the Timeline for the appropriate resource and time	Use Step 10 to schedule the activities
15.	~	Schedule BAPs in Impact, NoImpact, and NoImpact with Oversubscription modes against the Master Plan and the what-if plan		
16.	EOC	Click on the BAPs toggle button in the General Scheduler window	BAPs defined in EOC3.3 are displayed in the Activities section of the window for each resource	
17.	EOC	Select the Master Plan from the Open Plans List in the General Scheduler window	BAPs will be scheduled against the Master Plan	
18.	EOC	Click on the Impact toggle button	Activities will be scheduled in impact mode	

Step	Station	Action	Expected Results	Comments EOC3.4

19.	EOC	Schedule the following BAPs:
		
		EOC3_ASTER_BAP_1_FR
		    Start Time: 1999/175 01:00:00
		    Stop Time: 1999/175 01:01:00
		EOC3_CERESF_BAP_1_FR
		    Start Time: 1999/175 02:00:00
		    Stop Time: 1999/175 02:15:00
		EOC3_MODIS_BAP_1_FR
		    Start Time: 1999/175 05:00:00
		    Stop Event: Orbit 151, Sequence 1,
		        Sunset +00:01:00
		EOC3_MOPITT_BAP_1_FR
		    Start Time: 1999/175 02:15:00
		    Duration: 5 hours
			All activities are displayed on the Timeline for the appropriate resource and time
			6/24/99 00:59:55-01:01:05
			
			6/24/99 01:55:00-02:20:00
			Standby 6/24/99 02:00:30- 1/19/2058 03:14:06
			
			6/24/99 04:55:00-06:49:21
			Science Day 6/24/99 04:55:00- 1/19/2058 03:14:06
			
			6/24/99 02:14:30-07:16:10	

20.	EOC	Change the resource to schedule against to *RESOURCE*, select the desired BAP, enter the times, and click the Schedule button	All BAPS are displayed on the Timeline for the appropriate resource and time	
21.	EOC	Click on the NoImpact toggle button	BAPs will be scheduled in non-impact mode	

22.	EOC	Schedule the following BAPS:
		EOC3_CERESF_BAP_2_FR
		    Start Time: 1999/175 02:00:00
		    Stop Time: 1999/175 02:10:00
		EOC3_MISR_BAP_1_FR
		    Start Time: 1999/175 20:00:00
		    Stop Time: 1999/175 20:10:00
		EOC3_PMS_BAP_1_FR
		    Start Time: 1999/175 21:00:00
		    Stop Time: 1999/175 23:30:00
			EOC3_CERESF_BAP_2_FR *is not displayed* on the Timeline due to the conflict with EOC3_CERES_BAP_1_FR, all other activities are scheduled
			6/24/99 19:58:00-20:12:00
			
			6/24/99 21:00:00-23:30:00	

23.	EOC	Click on the Oversubscribe toggle button.	BAPs will be scheduled in non-impact with oversubscription mode	

Step	Station	Action	Expected Results	Comments	EOC3.4
24.	EOC	Schedule the following BAPs: EOC3_tbd_BAP_1_FR EOC3_tbd_BAP_1_FR EOC3_tbd_BAP_1_FR	*All* BAPs are displayed on the Timeline for the appropriate resource and time		
25.	~	Schedule commands in Impact, NoImpact, and NoImpact with Oversubscription modes against the Master Plan and the what-if plan			
26.	EOC	Click on the File menu item in the Timeline and select Open	Open Plan window is displayed		
27.	EOC	Select the Master Plan, select Start and Stop times of 1999/175 00:00:00 - 1999/176 00:00:00, and click OK	Timeline for the 1999/175 time range is displayed		
28.	EOC	Click on the Cmds toggle button in the General Scheduler window	Commands related to the selected resource are displayed in the Commands section of the window		
29.	EOC	Select the Master Plan from the Open Plans List in the General Scheduler window	Commands will be scheduled against the Master Plan		
30.	EOC	Click on the ATC Command toggle button	ATC Commands are displayed in the Commands section of the window		
31.	EOC	Click on the Impact toggle button	Commands will be scheduled in impact mode		
32.	EOC	Select the AM1 ASTER resource	ASTER commands are displayed in the Commands section of the window		
33.	EOC	Select the AST_TURN_ON_C_VDP1 command, enter a Start Time 1999/175 15:00:00 and a Stop Time of 1999/175 15:01:00, and click the Schedule button	The command is displayed on the Timeline for the ASTER resource		
34.	EOC	Click on the NoImpact toggle button	Commands will be scheduled in non-impact mode		
35.	EOC	Select the AST_TURN_OFF_C_VDP1 command, enter a Start Time 1999/175 15:00:30 and a Stop Time of 1999/175 15:01:30, and click the Schedule button	The command *is not displayed* on the Timeline for the ASTER resource		

Step	Station	Action	Expected Results	Comments EOC3.4
36.	EOC	Click on the Oversubscribe toggle button	Commands will be scheduled in non-impact with oversubscription mode	
37.	EOC	Select the AST_TURN_OFF_C_VDP1 command, enter a Start Time 1999/175 15:00:30 and a Stop Time of 1999/175 15:01:30, and click the Schedule button	The command *is displayed* on the Timeline for the ASTER resource	
38.	~	Schedule Procs in Impact, NoImpact, and NoImpact with Oversubscription modes against the Master Plan and the what-if plan		
39.	EOC	Click on the Procs toggle button	Procs are displayed in the Procedures section of the window	
40.	EOC	Click on the Impact toggle button	Procs will be scheduled in impact mode	
41.	EOC	Select the AM1 ASTER resource	ASTER Procs are displayed in the Commands section of the window	
42.	EOC	Select the EOC34_PROC_1 proc, enter a Start Time 1999/175 15:00:00 and a Stop Time of 1999/175 15:01:00, and click the Schedule button	The proc is displayed on the Timeline for the ASTER resource	
43.	EOC	Click on the NoImpact toggle button	Commands will be scheduled in non-impact mode	
44.	EOC	Select the EOC34_PROC_2 proc, enter a Start Time 1999/175 15:00:30 and a Stop Time of 1999/175 15:01:30, and click the Schedule button	The proc *is not displayed* on the Timeline for the ASTER resource	
45.	EOC	Click on the Oversubscribe toggle button	Commands will be scheduled in non-impact with oversubscription mode	
46.	EOC	Select the EOC34_PROC_3 proc, enter a Start Time 1999/175 15:00:30 and a Stop Time of 1999/175 15:01:30, and click the Schedule button	The proc *is displayed* on the Timeline for the ASTER resource	

EOC3.5   ASTER Scheduling

Schedule Mode

> *Receive ASTER Short Term Schedule (STS)*
> *Schedule STS on Master Plan (ASTER Filter- OTM8.9.1)*
> *Verify Preliminary Resource Schedule (PRS) sent to ASTER ICOS*
> *Receive ASTER STS (w/overlapping times)*
> *Schedule STS on Master Plan*
> *Verify PRS sent to ASTER ICOS (AGS?otm8.9.1)*

Analysis Mode

> *Receive ASTER Analysis Mode STS*
> *Schedule STS on What-If Plan*
> *Verify PRS sent to ASTER ICOS*

Schedule Mode

> *Receive ASTER Schedule Mode ODS*
> *Schedule ODS on Master Plan*
> *Verify ACS sent to ASTER ICOS*

Schedule Mode

> *Receive ASTER Schedule Mode ODS (w/ times overlapping previous ODS)*
> *Schedule ODS on Master Plan*
> *Verify ACS sent to ASTER ICOS*

Analysis Mode

> *Receive ASTER Schedule Mode ODS*
> *Schedule ODS on What-If plan*
> *Verify ACS sent to ASTER ICOS*

Late Change

> *Receive ASTER Schedule Mode ODS*
> *Schedule ODS on What-If Plan*
> *Unlock Timeline*
> *Run local script*
> *Verify ODS scheduled on Master Timeline*
> *Verify ACS sent to ASTER ICOS*

Step	Station	Action	Expected Results	Comments

Step	Station	Action	Expected Results	Comments
1.	EOC	Verify an ASTER STS with a schedule mode of "SCHEDULE" is transmitted from the ASTER ICOS to the ECS IST	The ASTER_STS_1999175001.txt file resides in the fosb/test/am1/data/PAS directory and is of the format described in the ECS/ASTER GDS ICD	
2.	EOC	Start the ASTER filterpoller **Tools…** **PAS** **ASTER filter** **OK**	ASTER filterpoller executes in background polling a predetermined directory and automatically scheduling STS and ODSs on the Master Plan. Late changes are scheduled on the What-If plan. Work Around: From the terminal window where the User Station was brought up, use vi to edit the ast_load script: **test** (or **cd fosb/test/am1/setup/scripts**) **vi ast_load** change -inFile to desired filename **:wq** From the terminal window where the User Station was brought up, run the script to schedule the activities: **ast_load**	
3.	EOC	Verify the activities in the STS are scheduled on the Master Plan: EOC3_ASTER_ACT_1_FR ASTER Stereo	The activities are displayed on the Timeline for the ASTER resource and the appropriate time 6/24/99 11:59:55-13:00:05 6/24/99 18:15:00-20:15:00	
4.	EOC/ ECS IST	Verify that a PRS is generated and sent to the ASTER ICOS	The PRS resides in the appropriate directory and is of the format described in the ECS/ASTER GDS ICD (including constraint information)	
5.	EOC	Verify an ASTER STS with a schedule mode of "SCHEDULE" and times that overlap the previous STS is transmitted from the ASTER ICOS to the ECS IST	The ASTER_STS_1999175002.txt file resides in the fosb/test/am1/data/PAS directory and is of the format described in the ECS/ASTER GDS ICD	

Step	Station	Action	Expected Results	Comments
6.	EOC	Start the ASTER filterpoller **Tools…** **PAS** **ASTER filter** **OK**	ASTER filterpoller executes in background polling a predetermined directory and automatically scheduling STS and ODSs on the Master Plan. Late changes are scheduled on the What-If plan. Work Around: From the terminal window where the User Station was brought up, use vi to edit the ast_load script: **test** (or **cd fosb/test/am1/setup/scripts**) **vi ast_load** change -inFile to desired filename **:wq** From the terminal window where the User Station was brought up, run the script to schedule the activities: **ast_load**	
7.	EOC	Verify the activities in the STS are scheduled on the Master Plan: EOC3_ASTER_ACT_1_FR ASTER Stereo	The activities are displayed on the Timeline for the ASTER resource and the appropriate time (overlap previously scheduled activities) 6/24/99 12:29:55-13:30:05 6/24/99 18:00:00-20:00:00	
8.	EOC/ ECS IST	Verify that a PRS is generated and sent to the ASTER ICOS	The PRS resides in the appropriate directory and is of the format described in the ECS/ASTER GDS ICD	
9.	EOC	Verify an ASTER STS with a schedule mode of "ANALYSIS" is transmitted from the ASTER ICOS to the ECS IST	The ASTER_STA_1999175003.txt file resides in the fosb/test/am1/data/PAS directory and is of the format described in the ECS/ASTER GDS ICD	

Step	Station	Action	Expected Results	Comments
10.	EOC	Start the ASTER filterpoller **Tools…** **PAS** **ASTER filter** **OK**	ASTER filterpoller executes in background polling a predetermined directory and automatically scheduling STS and ODSs on the Master Plan. Late changes are scheduled on the What-If plan. Work Around: From the terminal window where the User Station was brought up, use vi to edit the ast_load script: **test** (or **cd fosb/test/am1/setup/scripts**) **vi ast_load** change -inFile to desired filename **:wq** From the terminal window where the User Station was brought up, run the script to schedule the activities: **ast_load**	
11.	EOC	Verify the activities in the STS are scheduled on a what-if plan: EOC3_ASTER_ACT_1_FR ASTER Stereo	The activities are displayed on the WHATIF175003 plan on the Timeline for the ASTER resource and the appropriate time 6/24/99 12:29:55-13:30:05 6/24/99 18:00:00-20:00:00	
12.				

Step	Station	Action	Expected Results	Comments
14.	EOC	Start the ASTER filterpoller **Tools…** **PAS** **ASTER filter** **OK**	ASTER filterpoller executes in background polling a predetermined directory and automatically scheduling STS and ODSs on the Master Plan. Late changes are scheduled on the What-If plan. Work Around: From the terminal window where the User Station was brought up, use vi to edit the ast_load script: **test** (or **cd fosb/test/am1/setup/scripts**) **vi ast_load** change -inFile to desired filename **:wq** From the terminal window where the User Station was brought up, run the script to schedule the activities: **ast_load**	
15.	EOC	Verify the activities in the ODS are scheduled on the Master Plan: EOC3_ASTER_ACT_1_FR ASTER Stereo	The activities are displayed on the Timeline for the ASTER resource and the appropriate time 6/24/99 06:48:16- 09:02:45 6/24/99 09:05:00-09:06:00	
16.	EOC/ ECS IST	Verify that an ACS is generated and sent to the ASTER ICOS	The ACS resides in the appropriate directory and is of the format described in the ECS/ASTER GDS ICD (including constraint information)	
17.	EOC	Verify an ASTERODS with a schedule mode of "SCHEDULE" and times that overlap the previous ODS is transmitted from the ASTER ICOS to the ECS IST	The ASTER_ODS_1999175005.txt file resides in the fosb/test/am1/data/PAS directory and is of the format described in the ECS/ASTER GDS ICD	

Step	Station	Action	Expected Results	Comments
18.	EOC	Start the ASTER filterpoller **Tools…** **PAS** **ASTER filter** **OK**	ASTER filterpoller executes in background polling a predetermined directory and automatically scheduling STS and ODSs on the Master Plan. Late changes are scheduled on the What-If plan. Work Around: From the terminal window where the User Station was brought up, use vi to edit the ast_load script: **test** (or **cd fosb/test/am1/setup/scripts**) **vi ast_load** change -inFile to desired filename **:wq** From the terminal window where the User Station was brought up, run the script to schedule the activities: **ast_load**	
19.	EOC	Verify the activities in the ODS are scheduled on the Master Plan: EOC3_ASTER_ACT_1_FR ASTER Stereo	The activities are displayed on the Timeline for the ASTER resource and the appropriate time Note that the ASTER Stereo activity will overlap the previously scheduled ASTER Stereo activity from Step 67. Note that the EOC3_ASTER_ACT_1_FR activity in this step will be scheduled in impact mode, that is the previously scheduled EOC3_ASTER_ACT_1_FR activity from Step 67 will be removed from the schedule. 6/24/99 05:48:16-08:02:45 6/24/99 09:04:30-09:05:30	
20.	EOC/ ECS IST	Verify that an ACS is generated and sent to the ASTER ICOS	The ACS resides in the appropriate directory and is of the format described in the ECS/ASTER GDS ICD	

Step	Station	Action	Expected Results	Comments
21.	EOC	Verify an ASTERODS with a schedule mode of "ANALYSIS" is transmitted from the ASTER ICOS to the ECS IST	The ASTER_ODA_1999175006.txt file resides in the fosb/test/am1/data/PAS directory and is of the format described in the ECS/ASTER GDS ICD	
22.	EOC	Start the ASTER filterpoller **Tools…** **PAS** **ASTER filter** **OK**	ASTER filterpoller executes in background polling a predetermined directory and automatically scheduling STS and ODSs on the Master Plan. Late changes are scheduled on the What-If plan. Work Around: From the terminal window where the User Station was brought up, use vi to edit the ast_load script: **test** (or **cd fosb/test/am1/setup/scripts**) **vi ast_load** change -inFile to desired filename **:wq** From the terminal window where the User Station was brought up, run the script to schedule the activities: **ast_load**	
23.	EOC	Verify the activities in the ODS are scheduled on a what-if plan ASTER Stereo EOC3_ASTER_ACT_1_FR	The activities are displayed on the WHATIF175006 plan on the Timeline for the ASTER resource and the appropriate time 6/24/99 22:00:00-22:05:00 6/24/99 22:59:55-23:05:05	
24.	EOC/ ECS IST	Verify that an ACS is generated and sent to the ASTER ICOS	The ACS resides in the appropriate directory and is of the format described in the ECS/ASTER GDS ICD	
25.	EOC/ ECS IST	Verify that an ASTER Request for EOC Schedules is transmitted from the ASTER ICOS to the ECS IST	The Request for EOC Schedules resides in the appropriate directory and is of the format described in the ECS/ASTER GDS ICD	

Step	Station	Action	Expected Results	Comments
26.	EOC/ ECS IST	Verify that an Activity Schedule is generated and sent to the ASTER ICOS	The Activity Schedule resides in the appropriate directory and is of the format described in the ECS/ASTER GDS ICD	
27.	~	ASTER late change scheduled on What-If plan.		
28.	EOC	Verify an ASTERODS with a schedule mode of "SCHEDULE" is transmitted from the ASTER ICOS to the ECS IST	The ASTER requests scheduling for a time for which a command load has already been generated. The ASTER_ODA_1999175006.txt file resides in the fosb/test/am1/data/PAS directory and is of the format described in the ECS/ASTER GDS ICD	
29.	EOC	Start the ASTER filterpoller **Tools…** **PAS** **ASTER filter** **OK**	ASTER filterpoller executes in background polling a predetermined directory and automatically scheduling STS and ODSs on the Master Plan. Late changes are scheduled on the What-If plan. Work Around: From the terminal window where the User Station was brought up, use vi to edit the ast_load script: **test** (or **cd fosb/test/am1/setup/scripts**) **vi ast_load** change -inFile to desired filename **:wq** From the terminal window where the User Station was brought up, run the script to schedule the activities: **ast_load**	
30.	EOC	Verify the activities in the ODS are scheduled on a what-if plan ASTER Stereo EOC3_ASTER_ACT_1_FR	The activities are displayed on the WHATIF175006 plan on the Timeline for the ASTER resource and the appropriate time 6/24/99 22:00:00-22:05:00 6/24/99 22:59:55-23:05:05	

Step	Station	Action	Expected Results	Comments
31.	EOC	Unlock the portion of the timeline corresponding to the4 ASTER late change request.		OTM 8.9.5
32.	EOC	Run the local script to process the ODS file and schedule on the Master Timeline.	The activities are displayed on the Timeline for the ASTER resource and the appropriate time	
33.	EOC/ ECS IST	Verify that an ACS is generated and sent to the ASTER ICOS	The ACS resides in the appropriate directory and is of the format described in the ECS/ASTER GDS ICD	
34.	EOC/ ECS IST	Verify that an ASTER Request for EOC Schedules is transmitted from the ASTER ICOS to the ECS IST	The Request for EOC Schedules resides in the appropriate directory and is of the format described in the ECS/ASTER GDS ICD	
35.	EOC/ ECS IST	Verify that an Activity Schedule is generated and sent to the ASTER ICOS	The Activity Schedule resides in the appropriate directory and is of the format described in the ECS/ASTER GDS ICD	

EOC3.6   What-If Scheduling

Open What-if plan
Schedule Activities -
   Impact mode
   Non- Impact
      One activity not scheduled due to conflict w/ another activity
   Oversubscription
      Two activities scheduled overlapping existing activities
Schedule BAPs
   Impact
   Non-Impact
      One BAP not scheduled due to conflict w/ another activity
   Oversubscription
      Two BAP s scheduled overlapping existing activities
Schedule Commands
   Impact
   Non-Impact
      One command not scheduled due to conflict w/ another activity
   Oversubscription
      Two commands scheduled overlapping existing activities
Schedule Procs
   Impact
   Non-Impact
      One proc not scheduled due to conflict w/ another activity
   Oversubscription
      Two procs scheduled overlapping existing activities
Transfer from What-if plan to Master Plan
   Activity
   BAP
   Command
   Proc

Step	Station	Action	Expected Results	Comments
1.	EOC	Click on the File menu item in the Timeline and select New	Open Plan window is displayed	OTM 8.5.5

Step	Station	Action	Expected Results	Comments
2.	EOC	Enter the what-if plan name: EOC36_What-if, enter Start and Stop times of 1999/175 00:00:00 - 1999/176 00:00:00, and click OK	Timeline for the 1999/175 time range is displayed	
3.	EOC	Click on the Acts toggle button in the General Scheduler window	Activities defined in EOC3.1 are displayed in the Activities section of the window	
4.	EOC	Select the EOC36_What-if plan from the Open Plans List in the General Scheduler window	Activities will be scheduled against the what-if plan	
5.	EOC	Click on the Impact toggle button	Activities will be scheduled in impact mode	

Step	Station	Action	Expected Results	Comments
6.	EOC	Schedule the following activities: EOC3_ASTER_ACT_1_FR Start Time: 1999/175 01:00:00 Stop Time: 1999/175 01:01:00 EOC3_CERESF_ACT_1_FR Start Time: 1999/175 02:00:00 Stop Time: 1999/175 02:15:00 EOC3_MODIS_ACT_1_FR Start Time: 1999/175 05:00:00 Stop Event: Orbit 151, Sequence 1, Sunset +00:01:00 EOC3_MOPITT_ACT_1_FR Start Time: 1999/175 02:15:00 Duration: 5 hours EOC3_CDH_ACT_1_FR Start Event: Orbit 152, Sequence 1, Sunrise -02:00:00 Stop Time: 1999/175 10:00:00 EOC3_COM_ACT_1_FR Start Event: Orbit 155, Sequence 1, Sunrise +03:00:00 Stop Event: Orbit 155, Sequence 1, Sunrise +04:00:00 EOC3_EAS_ACT_1_FR Start Event: Orbit 159, Sequence 1, Sunset -04:00:00 Duration: 15 minutes EOC3_EPS_ACT_1_FR Start Time: 1999/175 18:00:00 Stop Time: 1999/175 19:00:00 EOC3_GNC_ACT_1_FR Start Time: 1999/175 23:00:00 Stop Time: 1999/17523:45:00	All activities are displayed on the Timeline for the appropriate resource and time 6/24/99 00:59:55-01:01:05 6/24/99 01:55:00-02:20:00 Standby 6/24/99 02:00:30- 1/19/2058 03:14:06 6/24/99 04:55:00-06:49:21 Science Day 6/24/99 04:55:00- 1/19/2058 03:14:06 6/24/99 02:14:30-07:16:10 6/24/99 07:02:35-10:00:05 6/24/99 16:54:19-18:04:19 6/24/99 15:57:26-16:16:26 6/24/99 18:00:00-19:00:00 6/24/99 23:00:00-23:45:00 All activities are displayed on the Timeline for the appropriate resource and time	Per OTM 8.6.1

Step	Station	Action	Expected Results	Comments
7.	EOC	Click on theNoImpact toggle button	Activities will be scheduled in non-impact mode	

8.	EOC	Schedule the following activities:
		EOC3_CERESF_ACT_2
		    Start Time: 1999/175 02:00:00
		    Stop Time: 1999/175 02:10:00
		EOC3_MISR_ACT_1_FR
		    Start Time: 1999/175 20:00:00
		    Stop Time: 1999/175 20:10:00
		EOC3_PMS_ACT_1_FR
		    Start Time: 21:00:00
		    Stop Time: 23:30:00
		EOC3_TCS_ACT_1_FR
		    Start Time: 22:00:00
		    Stop Time: 23:00:01
			EOC3_CERESF_ACT_2_FR*is not displayed* on the Timeline due to the conflict with EOC3_CERESF_ACT_1_FR, all other activities are scheduled
			6/24/99 19:58:00-20:12:00
			
			6/24/99 21:00:00-23:30:00
			
			6/24/99 22:00:00-23:00:01
				Use Step 7 to schedule the activities

9.	EOC	Click on theNoImpact and Oversubscribe toggle buttons	Activities will be scheduled in non-impact with oversubscription mode	
10.	EOC	Schedule the following activities:	*All* activities are displayed on the Timeline for the appropriate resource and time, even though the TCS activity is scheduled twice with overlapping times	Use Step 7 to schedule the activities
11.	EOC	Click on the File menu item in the Timeline and select Open	Open Plan window is displayed	
12.	EOC	Select the what-if plan, select Start and Stop times of 1999/175 00:00:00 - 1999/176 00:00:00, and click OK	Timeline for the 1999/175 time range is displayed	
13.	EOC	Click on theBAPs toggle button in the General Scheduler window	BAPs defined in EOC3.3 are displayed in the Activities section of the window for each resource	
14.	EOC	Select the Master Plan from the Open Plans List in the General Scheduler window	BAPs will be scheduled against the Master Plan	
15.	EOC	Click on the Impact toggle button	Activities will be scheduled in impact mode	

Step	Station	Action	Expected Results	Comments

16.	EOC	Schedule the following BAPs:
		
		EOC3_ASTER_BAP_1_FR
		    Start Time: 1999/175 01:00:00
		    Stop Time: 1999/175 01:01:00
		EOC3_CERESF_BAP_1_FR
		    Start Time: 1999/175 02:00:00
		    Stop Time: 1999/175 02:15:00
		EOC3_MODIS_BAP_1_FR
		    Start Time: 1999/175 05:00:00
		    Stop Event: Orbit 151, Sequence 1,
		        Sunset +00:01:00
		EOC3_MOPITT_BAP_1_FR
		    Start Time: 1999/175 02:15:00
		    Duration: 5 hours
			All activities are displayed on the Timeline for the appropriate resource and time
			6/24/99 00:59:55-01:01:05
			
			6/24/99 01:55:00-02:20:00
			Standby 6/24/99 02:00:30- 1/19/2058 03:14:06
			
			6/24/99 04:55:00-06:49:21
			Science Day 6/24/99 04:55:00- 1/19/2058 03:14:06
			
			6/24/99 02:14:30-07:16:10	

17.	EOC	Change the resource to schedule against to *RESOURCE*, select the desired BAP, enter the times, and click the Schedule button	All BAPS are displayed on the Timeline for the appropriate resource and time	
18.	EOC	Click on the NoImpact toggle button	BAPs will be scheduled in non-impact mode	

19.	EOC	Schedule the following BAPS:
		EOC3_CERESF_BAP_2_FR
		    Start Time: 1999/175 02:00:00
		    Stop Time: 1999/175 02:10:00
		EOC3_MISR_BAP_1_FR
		    Start Time: 1999/175 20:00:00
		    Stop Time: 1999/175 20:10:00
		EOC3_PMS_BAP_1_FR
		    Start Time: 1999/175 21:00:00
		    Stop Time: 1999/175 23:30:00
			EOC3_CERESF_BAP_2_FR *is not displayed* on the Timeline due to the conflict with EOC3_CERES_BAP_1_FR, all other activities are scheduled
			6/24/99 19:58:00-20:12:00
			
			6/24/99 21:00:00-23:30:00	

20.	EOC	Click on the Oversubscribe toggle button.	BAPs will be scheduled in non-impact with oversubscription mode	

Step	Station	Action	Expected Results	Comments
21.	EOC	Schedule the following BAPs: EOC3_tbd_BAP_1_FR EOC3_tbd_BAP_1_FR EOC3_tbd_BAP_1_FR	*All* BAPs are displayed on the Timeline for the appropriate resource and time	
22.	EOC	Click on the Cmds toggle button in the General Scheduler window	Commands related to the selected resource are displayed in the Commands section of the window	
23.	EOC	Select the what-if plan from the Open Plans List in the General Scheduler window	Commands will be scheduled against the what-if plan	
24.	EOC	Click on the ECL Command toggle button	ECL Commands are displayed in the Commands section of the window	
25.	EOC	Click on the Impact toggle button	Commands will be scheduled in impact mode	
26.	EOC	Select the AM1 ASTER resource	ASTER commands are displayed in the Commands section of the window	
27.	EOC	Select the AST_TURN_ON_C_VDP1 command, enter a Start Time 1999/175 15:00:00 and a Stop Time of 1999/175 15:01:00, and click the Schedule button	The command is displayed on the Timeline for the ASTER resource	
28.	EOC	Click on the NoImpact toggle button	Commands will be scheduled in non-impact mode	
29.	EOC	Select the AST_TURN_OFF_C_VDP1 command, enter a Start Time 1999/175 15:00:30 and a Stop Time of 1999/175 15:01:30, and click the Schedule button	The command *is not displayed* on the Timeline for the ASTER resource	
30.	EOC	Click on the NoImpact and Oversubscribe toggle buttons	Commands will be scheduled in non-impact with oversubscription mode	
31.	EOC	Select the AST_TURN_OFF_C_VDP1 command, enter a Start Time 1999/175 15:00:30 and a Stop Time of 1999/175 15:01:30, and click the Schedule button	The command *is displayed* on the Timeline for the ASTER resource	
32.	~	Schedule Procs in Impact, NoImpact, and NoImpact with Oversubscription modes against the Master Plan and the what-if plan		

Step	Station	Action	Expected Results	Comments
33.	EOC	Click on the Procs toggle button	Procs are displayed in the Procedures section of the window	
34.	EOC	Click on the Impact toggle button	Procs will be scheduled in impact mode	
35.	EOC	Select the AM1 ASTER resource	ASTER Procs are displayed in the Commands section of the window	
36.	EOC	Select the EOC34_PROC_1 proc, enter a Start Time 1999/175 15:00:00 and a Stop Time of 1999/175 15:01:00, and click the Schedule button	The proc is displayed on the Timeline for the ASTER resource	
37.	EOC	Click on the NoImpact toggle button	Commands will be scheduled in non-impact mode	
38.	EOC	Select the EOC34_PROC_2 proc, enter a Start Time 1999/175 15:00:30 and a Stop Time of 1999/175 15:01:30, and click the Schedule button	The proc *is not displayed* on the Timeline for the ASTER resource	
39.	EOC	Click on the Oversubscribe toggle button	Commands will be scheduled in non-impact with oversubscription mode	
40.	EOC	Select the EOC34_PROC_3 proc, enter a Start Time 1999/175 15:00:30 and a Stop Time of 1999/175 15:01:30, and click the Schedule button	The proc *is displayed* on the Timeline for the ASTER resource	
41.	EOC	Open the Master Timeline	Master timeline displayed	
42.	EOC	Copy an activity from the What-If timeline to the Master Timeline.	Activity displayed on the Master Timeline.	
43.	EOC	Copy a BAP from the What-If timeline to the Master Timeline.	BAP displayed on the Master Timeline.	
44.	EOC	Copy a command from the What-If timeline to the Master Timeline.	Command displayed on the Master Timeline.	
45.	EOC	Copy a proc from the What-If timeline to the Master Timeline.	Proc displayed on the Master Timeline.	

EOC3.7   Microprocessor, FSW, Table, and RTS Load Generation and Uplink Scheduling

Ingest Microprocessor load (twice)
   validate, generateuplink load
   Verify load contents file
   Verify load image file
   Verify load uplink file
   Verify load report file
   Verify load catalog inSybase
Ingest FSW load (twice- 2nd time w/ errors)
   validate, generateuplink load
   Verify load contents file
   Verify load image file
   Verify load uplink file
   Verify load report file
   Verify load catalog inSybase
Ingest Table load (twice)
   validate, generateuplink load
   Verify load contents file
   Verify load image file
   Verify load uplink file
   Verify load report file
   Verify load catalog inSybase
Ingest RTS load (twice)
   ???Build RTS load ???
   validate, generateuplink load
   Verify load contents file
   Verify load image file
   Verify load uplink file
   Verify load report file
   Verify load catalog inSybase

Step	Station	Action	Expected Results	Comments
1.	EOC	Click the INGEST button in the Load Manager window	LOAD INGEST window is displayed	
2.	EOC	Type the source directory in the Filter box /fosb/test/am1/loadcontents/* and click the Filter button	The available microprocessor load contents files are displayed	
3.	EOC	Select the AM1_MPR_MIS_BUT_8_ROB.cnt microprocessor load file to ingest and click OK	Microprocessor load filename appears in the Local list section of the Load Manager window	
4.	EOC	Select the AM1_MPR_MIS_BUT_8_ROB.cnt file in the Local list section of the Load Manager window, and click the Validate button on the Load Manager window	Event Display indicates that the validation is complete	
5.	EOC	Select the AM1_MPR_MIS_BUT_8_ROB.cnt file in the Local list section of the Load Manager window, and click the Generate button on the Load Manager window	LOAD GENERATOR window is displayed with the Load name of AM1_MPR_MIS_BUT_8_ROB.cnt and the Load type of MPR and the Destination of MIS	
6.	EOC	Click on the Select Time button	Pair Time Selector window is displayed	
7.	EOC	Enter Stop: 1999/174<return>03:00:00.000<return> Start: 1999/174<return>02:00:00.000<return>	Absolute Stop Time: 1999/174 03:00:00 Absolute Start Time: 1999/174 02:00:00	
8.	EOC	Click OK	Pair Time Selector window is no longer displayed, Start and Stop times are displayed on the LOAD GENERATOR window	
9.	EOC	Enter Start Location: 10 Size: 1000 Click on the End Location box Enter Description: EOC3 FR TEST	Start Location: 10 Size: 1000 End Location: 1009 should appear automatically after clicking on the box Description: EOC3 FR TEST	
10.	EOC	Click OK	Event Display indicates the load generation is complete and the Status Message in the Load Manager window indicates that the load generation is complete	

Step	Station	Action	Expected Results	Comments
11.	EOC	Verify the AM1_MPR_MIS_BUT_8_ROB_01 _OF_01.upl load filename appears in the Catalogue list on the Load Manager window		
12.	EOC	Verify the MPR load contents file (AM1_MPR_ MIS_BUT_8_ROB.cnt) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
13.	EOC	Verify the MPR load image file (AM1_ MPR_ MIS_BUT_8_ROB_01_OF_01.img) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
14.	EOC	Verify the MPR load uplink file (AM1_ MPR_ MIS_BUT_8_ROB_01_OF_01.upl) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
15.	EOC	Verify the MPR load report file (AM1_MPR_ MIS_BUT_8_ROB.rpt) is in the /fosb/test/am1/reports directory and is of the correct format	Use offline analysis to check format	
16.	EOC	Copy the files noted in steps 12-15 to another directory for offline analysis: **cp <filename> /home/ivvtest4**		
17.	EOC	Verify the load catalog is updated using Sybase: **%isql -Ufos_dba -Pfos_dba** **>use am1_fos_ops** **>go** **>select * from fos_load_cat** **>go**	Verify the microprocessor load information is in the fos_load_cat table, then type **>exit** to exit Sybase	
18.	EOC	Click the INGEST button in the Load Manager window	LOAD INGEST window is displayed	
19.	EOC	Type the source directory in the Filter box /fosb/test/am1/loadcontents/* and click the Filter button	The available microprocessor load contents files are displayed	

Step	Station	Action	Expected Results	Comments
20.	EOC	Select the AM1_MPR_MIS_CHECK_SUM_SAMPLE_ ROB.cnt microprocessor load file to ingest and click OK	Microprocessor load filename appears in the Local list section of the Load Manager window	
21.	EOC	Select the AM1_MPR_MIS_CHECK_SUM_SAMPLE_ ROB.cnt file in the Local list section of the Load Manager window, and click the Validate button on the Load Manager window	Event Display indicates that the validation is complete	
22.	EOC	Select the AM1_MPR_MIS_CHECK_SUM_SAMPLE_ ROB.cnt file in the Local list section of the Load Manager window, and click the Generate button on the Load Manager window	LOAD GENERATOR window is displayed with the Load name of AM1_MPR_MIS_CHECK_SUM_SAMPLE_ ROB.cnt and the Load type of MPR and the Destination of MIS	
23.	EOC	Click on the Select Time button	Pair Time Selector window is displayed	
24.	EOC	Enter Stop: 1999/174<return>04:00:00.000<return> Start: 1999/174<return>03:10:00.000<return>	Absolute Stop Time: 1999/174 04:00:00 Absolute Start Time: 1999/174 03:10:00	
25.	EOC	Click OK	Pair Time Selector window is no longer displayed, Start and Stop times are displayed on the LOAD GENERATOR window	
26.	EOC	Enter Start Location: 100 Size: 150 Click on the End Location box Enter Description: EOC3 FR TEST	Start Location: 100 Size: 150 End Location: 249 should appear automatically after clicking on the box Description: EOC3 FR TEST	
27.	EOC	Click OK	Event Display indicates the load generation is complete and the Status Message in the Load Manager window indicates that the load generation is complete	

Step	Station	Action	Expected Results	Comments
28.	EOC	Verify the AM1_MPR_MIS_CHECK_SUM_SAMPLE_ROB_01_OF_01.upl load filename appears in the Catalogue list on the Load Manager window		
29.	EOC	Verify the MPR load contents file (AM1_MPR_MIS_CHECK_SUM_SAMPLE_ROB.cnt) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
30.	EOC	Verify the MPR load image file (AM1_MPR_MIS_CHECK_SUM_SAMPLE_ROB_01_OF_01.img) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
31.	EOC	Verify the MPR load uplink file (AM1_MPR_MIS_CHECK_SUM_SAMPLE_ROB_01_OF_01.upl) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
32.	EOC	Verify the MPR load report file (AM1_MPR_MIS_CHECK_SUM_SAMPLE_ROB.rpt) is in the /fosb/test/am1/reports directory and is of the correct format	Use offline analysis to check format	
33.	EOC	Copy the files noted in steps 29-32 to another directory for offline analysis: **cp <filename> /home/ivvtest4**		
34.	EOC	Verify the load catalog is updated using Sybase: **%isql -Ufos_dba -Pfos_dba** **>use am1_fos_ops** **>go** **>select * from fos_load_cat** **>go**	Verify the microprocessor load information is in the fos_load_cat table, then type **>exit** to exit Sybase	

Step	Station	Action	Expected Results	Comments
35.	EOC/ SDVF	Ingest and validate a flight software load contents file, and generate the flight software uplink load, the load report, and the load image file		
36.	EOC	Bring up the Table Load Builder window: click on the Tools button on the Control window, select Table Load Builder	Table Load Builder window is displayed	
37.	EOC	Select New from the File menu item in the Table Load Builder window	Table Template Selection window is displayed	
38.	EOC	Enter the spacecraft AM1 and the subsystem ASTER, select the template ESA_OFFSET_TBL, and click OK	Table Template Selection window is no longer displayed and the Table Load Builder window contains the table template (8 fields of default values)	
39.	EOC	Click on the Select Time button	Pair Time Selector window is displayed	
40.	EOC	Enter Stop: 1999/174<return>01:00:00.000<return> Start: 1999/174<return>00:00:00.000<return>	Absolute Stop Time: 1999/174 01:00:00 Absolute Start Time: 1999/174 00:00:00	
41.	EOC	Click OK	Pair Time Selector window is no longer displayed, Start and Stop times are displayed in the Uplink Time Period portion of the Table Load Builder window	
42.	EOC	Modify the default parameters with the following values: Field 1: 0.000000 Field 6: 4098 Field 8: 127.000000		
43.	EOC	Select Validate from the File menu item in the Table Load Builder window	Bottom portion of the Table Load Builder window indicates a status of Validation Complete	

Step	Station	Action	Expected Results	Comments
44.	EOC	Select Generate from the File menu item in the Table Load Builder window	Bottom portion of the Table Load Builder window indicates a status of Validation Complete, Table load generation complete, and Generate Load Successful; Event Display indicates load generation started and completed	
45.	EOC	Verify the table load contents file (AM1_TBL_ESA_OFFSET_TBL.cnt) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	Verify FSW Table Load File Format in ICD Between ECS and SDVF section5 (505-41-37) 5.1.1.2
46.	EOC	Verify the table load image file (AM1_TBL_ESA_OFFSET_TBL_01_OF_01.img) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	5.1.1.1
47.	EOC	Verify the table load uplink file (AM1_TBL_ESA_OFFSET_TBL_01_OF_01.upl) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
48.	EOC	Verify the table load report file (AM1_TBL_ESA_OFFSET_TBL.rpt) is in the /fosb/test/am1/reports directory and is of the correct format	Use offline analysis to check format	
49.	EOC	Copy the files noted in steps 45-48 to another directory for offline analysis: **cp <filename> /home/ivvtest4**		
50.	EOC	Verify the load catalog is updated using Sybase: **%isql -Ufos_dba -Pfos_dba** **>use am1_fos_ops** **>go** **>select * from fos_load_cat** **>go**	Verify the table load information is in the fos_load_cat table, then type **>exit** to exit Sybase	

Step	Station	Action	Expected Results	Comments
51.	EOC	Select New from the File menu item in the Table Load Builder window	Table Template Selection window is displayed	
52.	EOC	Enter the spacecraft AM1 and the subsystem ASTER, select the template ESA_OFFSET_TBL, and click OK	Table Template Selection window is no longer displayed and the Table Load Builder window contains the table template (8 fields of default values)	
53.	EOC	Enter the Table Name of ESA_OFFSET_TBL_INVALID		
54.	EOC	Click on the Select Time button	Pair Time Selector window is displayed	
55.	EOC	Enter Stop: 1999/174<return>03:00:00.000<return> Start: 1999/174<return>02:00:00.000<return>	Absolute Stop Time: 1999/174 03:00:00 Absolute Start Time: 1999/174 02:00:00	
56.	EOC	Click OK	Pair Time Selector window is no longer displayed, Start and Stop times are displayed in the Uplink Time Period portion of the Table Load Builder window	
57.	EOC	Modify the default parameters with the following values: Field 2: 2.000000 Field 6: 4098 Field 7: 10		
58.	EOC	Select Validate from the File menu item in the Table Load Builder window	Bottom portion of the Table Load Builder window indicates a status of 2 ESA1 H course bias offset: ERROR: Invalid Data Entry 7 ESA1 H course bias offset: ERROR: Invalid Data Entry	
59.	EOC	Select Generate from the File menu item in the Table Load Builder window	Bottom portion of the Table Load Builder window indicates a status of ERROR: Unable to Generate Load. Invalid Data.	
60.	EOC	Modify the default parameters with the following values: Field 7: -2		

Step	Station	Action	Expected Results	Comments
61.	EOC	Select Validate from the File menu item in the Table Load Builder window	Bottom portion of the Table Load Builder window indicates a status of 2 ESA1 H course bias offset: ERROR: Invalid Data Entry	
62.	EOC	Modify the default parameters with the following values: Field 2: 0.000000		
63.	EOC	Select Validate from the File menu item in the Table Load Builder window	Bottom portion of the Table Load Builder window indicates a status of Validation Complete	
64.	EOC	Select Generate from the File menu item in the Table Load Builder window	Bottom portion of the Table Load Builder window indicates a status of Validation Complete, Table load generation complete, and Generate Load Successful; Event Display indicates load generation started and completed	
65.	EOC	Verify the table load contents file (AM1_TBL_ESA_OFFSET_TBL_INVALID.cnt) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	Verify FSW Table Load File Format in ICD Between ECS and SDVF section5 (505-41-37) 5.1.1.2
66.	EOC	Verify the table load image file (AM1_TBL_ESA_OFFSET_TBL_INVALID_01_OF_01.img) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	5.1.1.1
67.	EOC	Verify the table load uplink file (AM1_TBL_ESA_OFFSET_TBL_INVALID_01_OF_01.upl) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
68.	EOC	Verify the table load report file (AM1_TBL_ESA_OFFSET_TBL_INVALID.rpt) is in the /fosb/test/am1/reports directory and is of the correct format	Use offline analysis to check format	

Step	Station	Action	Expected Results	Comments
69.	EOC	Copy the files noted in steps 65-68 to another directory for offline analysis: **cp <filename> /home/ivvtest4**		
70.	EOC	Verify the load catalog is updated using Sybase: **%isql -Ufos_dba -Pfos_dba** **>use am1_fos_ops** **>go** **>select * from fos_load_cat** **>go**	Verify the table load information is in the fos_load_cat table, then type **>exit** to exit Sybase	
71.	EOC	Select New from the File menu item in the Table Load Builder window	Table Template Selection window is displayed	
72.	EOC	Enter the spacecraft AM1 and the subsystem ASTER, select the template ESA_PARAMS_TBL, and click OK	Table Template Selection window is no longer displayed and the Table Load Builder window contains the table template (9 fields of default values)	
73.	EOC	Click on the Select Time button	Pair Time Selector window is displayed	
74.	EOC	Enter Stop: 1999/174<return>05:00:00.000<return> Start: 1999/174<return>04:00:00.000<return>	Absolute Stop Time: 1999/174 05:00:00 Absolute Start Time: 1999/174 04:00:00	
75.	EOC	Click OK	Pair Time Selector window is no longer displayed, Start and Stop times are displayed in the Uplink Time Period portion of the Table Load Builder window	
76.	EOC	Modify the default parameters with the following values: Field 2: 62 Field 4: 8 Field 5: 75		
77.	EOC	Select Generate from the File menu item in the Table Load Builder window	Bottom portion of the Table Load Builder window indicates a status of Validation Complete, Table load generation complete, and Generate Load Successful; Event Display indicates load generation started and completed	

Step	Station	Action	Expected Results	Comments
78.	EOC	Verify the table load contents file (AM1_TBL_ESA_PARAMS_TBL.cnt) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
79.	EOC	Verify the table load image file (AM1_TBL_ESA_PARAMS_TBL_01_OF_01. img) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
80.	EOC	Verify the table load uplink file (AM1_TBL_ESA_PARAMS_TBL_01_OF_01.upl) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
81.	EOC	Verify the table load report file (AM1_TBL_ESA_PARAMS_TBL.rpt) is in the /fosb/test/am1/reports directory and is of the correct format	Use offline analysis to check format	
82.	EOC	Copy the files noted in steps 78-81 to another directory for offline analysis: **cp \<filename\> /home/ivvtest4**		
83.	EOC	Verify the load catalog is updated using Sybase: **%isql -Ufos_dba -Pfos_dba** **>use am1_fos_ops** **>go** **>select * from fos_load_cat** **>go**	Verify the table load information is in the fos_load_cat table, then type **>exit** to exit Sybase	
84.	EOC	Bring down the Table Load Builder window: click on the File menu item and select Quit	Table Load Builder window is no longer displayed	
85.	EOC	Verify the AM1_RTS_025_test1 file is located in the /home/ivvtest4/robstuff/formalrun/RTSfiles directory: **cd /home/ivvtest4/rob/formalrun/RTSfiles** **more AM1_RTS_025_test1**	The AM1_RTS_025_test1 file contains less than 16 commands	

Step	Station	Action	Expected Results	Comments
86.	EOC	From the terminal window where the User Station was brought up, run the CreateRTS script: **a. setenv FUILOADDIR /fosb/test/am1/loadcontents** **b. source /fosb/test/am1/scripts/setup FosEnvVars** **c. setenv SCRIPT UserStation** **d. cd /fosb/test/am1/bin/sun_sparc_5-4** **e. CreateRTS /home/ivvtest4/rob/formalrun/RTSfiles AM1_RTS_025_test1 025**	a. nothing b. nothing c. nothing d. nothing e. Terminal window indicates a status of request generated, Event Display indicates a status of RTS load generation started and completed	
87.	EOC	Verify the RTS load contents file (AM1_RTS_025_test1.cnt) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
88.	EOC	Verify the RTS load image file (AM1_RTS_025_test1.img) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
89.	EOC	Verify the RTS load uplink file (AM1_RTS_025_test1.upl) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
90.	EOC	Verify the RTS load report file (AM1_RTS_025_test1.rpt) is in the /fosb/test/am1/reports directory and is of the correct format	Use offline analysis to check format	
91.	EOC	Copy the files noted in steps 87-90 to another directory for offline analysis: **cp <filename> /home/ivvtest4**		

Step	Station	Action	Expected Results	Comments
92.	EOC	Verify the load catalog is updated using Sybase: **%isql -Ufos_dba -Pfos_dba** **>use am1_fos_ops** **>go** **>select * from fos_load_cat** **>go**	Verify the table load information is in the fos_load_cat table, then type **>exit** to exit Sybase	
93.	EOC	Verify the AM1_RTS_025_test2 file is located in the /home/ivvtest4/robstuff/formalrun/RTSfiles directory: **cd /home/ivvtest4/rob/formalrun/RTSfiles** **more AM1_RTS_025_test2**	The AM1_RTS_025_test2 file contains exactly 16 commands	
94.	EOC	From the terminal window where the User Station was brought up, run the CreateRTS script: **a. setenv FUILOADDIR /fosb/test/am1/loadcontents** **b. source /fosb/test/am1/scripts/setup FosEnvVars** **c. setenv SCRIPT UserStation** **d. cd /fosb/test/am1/bin/sun_sparc_5-4** **e. CreateRTS /home/ivvtest4/rob/formalrun/RTSfiles AM1_RTS_025_test2 025**	a. nothing b. nothing c. nothing d. nothing e. Terminal window indicates a status of request generated, Event Display indicates a status of request completed	
95.	EOC	Verify the RTS load contents file (AM1_RTS_025_test2.cnt) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
96.	EOC	Verify the RTS load image file (AM1_RTS_025_test2.img) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	

Step	Station	Action	Expected Results	Comments
97.	EOC	Verify the RTS load uplink file (AM1_RTS_025_test2.upl) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	
98.	EOC	Verify the RTS load report file (AM1_RTS_025_test2.rpt) is in the /fosb/test/am1/reports directory and is of the correct format	Use offline analysis to check format	
99.	EOC	Copy the files noted in steps 95-98 to another directory for offline analysis: **cp <filename> /home/ivvtest4**		
100.	EOC	Verify the load catalog is updated using Sybase: **%isql -Ufos_dba -Pfos_dba** **>use am1_fos_ops** **>go** **>select * from fos_load_cat** **>go**	Verify the table load information is in the fos_load_cat table, then type **>exit** to exit Sybase	
101.	EOC	Verify the AM1_RTS_025_test3 file is located in the /home/ivvtest4/robstuff/formalrun/RTSfiles directory: **cd /home/ivvtest4/rob/formalrun/RTSfiles** **more AM1_RTS_025_test3**	The AM1_RTS_025_test3 file contains more than 16 commands	

Step	Station	Action	Expected Results	Comments
102.	EOC	From the terminal window where the User Station was brought up, run theCreateRTS script: **a. setenv FUILOADDIR /fosb/test/am1/loadcontents** **b. source /fosb/test/am1/scripts/setup FosEnvVars** **c. setenv SCRIPTUserStation** **d. cd /fosb/test/am1/bin/sun_sparc_5-4** **e. CreateRTS /home/ivvtest4/rob/formalrun/RTSfiles AM1_RTS_025_test3 025**	a. nothing b. nothing c. nothing d. nothing e. Terminal window indicates a status of no more than 16 commands are permitted in an rts load; no load files are generated	

EOC3.8   TDRSS Contact Scheduling
Test CONNection between EOC and NCC
Schedule individual TDRSS contact activity
Schedule a batch of nominal TDRSS contact times over a given interval
          Change contact algorithm parameters
Schedule an individual ground station contact activity
Submit TDRSS contact times to the NCC

Step	Station	Action	Expected Results	Comments
1.	EOC	Test connection between EOC and NCC. In the Communication Contact Scheduler window: press the **CONN** icon		
2.	~	Schedule individual TDRSS contact activity		
3.	~	Schedule a batch of nominal TDRSS contact times over a given interval		
4.	~	Change contact algorithm parameters		
5.	~	Schedule an individual ground station contact activity		
6.	~	Submit TDRSS contact times to the NCC		
7.	NCC	Send schedules to EOC	NCC contact times are displayed on the Timeline	
8.	EOC/ EDOS	Verify that schedules are provided to EDOS		
9.				

EOC3.9   DAS Creation and ATC Load Generation
Generate DAS
     approve/disapprove soft constraints
     Verify ATC load contents file
     Verify ATC load image file
     Verify ATC load uplink file
     Verify ATC load report file
     Verify ATC load catalog in Sybase
Connect to String, CAC, open CCW, open ground script, print
Attempt to generate DAS during activities w/hard constraints
     DAS not generated
Constraint Check

Step	Station	Action	Expected Results	Comments
1.	EOC	In the Load Generator window, enter DAS ID of 175 and Version of 1		
2.	EOC	Enter DAS Start time of 6/24/99 00:00:00 and a DAS Stop time of 6/25/99 00:00:00		
3.	EOC	Enter an Uplink Start time of 6/23/99 00:00:00 and an Uplink Stop time of 6/23/99 08:00:00		
4.	EOC	Click OK to submit the request for DAS creation	The activities over the selected time period are used to generate the DAS. The user is prompted to approve or disapprove soft activity constraints. The ATC load contents, ATC load image, ATC load uplink, ATC load report, and integrated report are generated. The load catalog is updated (Sybase).	
5.	EOC	Verify the ATC load contents file (AM1_ATC_99_175_a.cnt) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	ICD-106
6.	EOC	Verify the ATC load image file (AM1_ATC_99_175_a_1_OF_1.img) is in the /fosb/test/am1/loads directory and is of the correct format	Use offline analysis to check format	

Step	Station	Action	Expected Results	Comments

Step	Station	Action	Expected Results	Comments
		1999/175 00:00:00 and the DAS Stop time entered previously, 1999/176 00:00:00, and click return and OK		
17.	EOC	Click on the File Menu Item and select Print to print the ground script	Verify using offline analysis that all scheduled activities from the timeline appear in the ground script	
18.	EOC/ ISTs	Verify the DAS, ATC load report and the integrated report are available to the ISTs		December only
19.	~	Schedule the ATC load for uplink		
20.	EOC	Enter the start and stop time for DAS creation for a period of time in which there are activities with hard constraint violations		
21.	EOC	Enter DAS ID (DOY) and version #		
22.	EOC	Click OK to submit the request for DAS creation	The activities over the selected time period are used to generate the DAS. Since there are hard constraint violations, the ATC load, ATC load report, integrated report, and ground script are *not* generated.	
23.	EOC	Select Constraint Check on the Load Generator window		
24.	EOC	Select the Master Plan		
25.	EOC	Enter start and stop times		
26.	EOC	Enter an ID for the request		
27.	EOC	Click Submit to submit the request for a constraint check	The activities over the selected time period are activity-level and command-level constraint checked. No ATC load or ground script is generated.	
28.	EOC	Verify that the result of the constraint check request are displayed		
29.		Continue on to EOC3.10 time permitting.		

EOC3.10   Late Change/TOO Scheduling
Receive late change request
Unlock portion of Master plan
Perform constraint checks
Verify new ATC generated
ATC loads generated for subsequent DAS have been removed from the system
Schedule additional communication contacts

Step	Station	Action	Expected Results	Comments
1.	EOC	Ensure ATC loads present.		
2.	EOC	Generate ATC loads for DASs subsequent to the ATC to be changed.		
3.	EOC	Receive late change requests from ISTs.	Late change requests received from ISTs.	ISTs available for December run.
4.	EOC	Unlock the portion of the master plan of the mission timeline corresponding to the late change requests. On Load_Generator Modify menu select **Show Locks** select desired resource Enter desired lock time **OK**	Load_Generator Locking and Unlocking Resources window opens.	OTM 8.10.1.8
5.	EOC	Perform constraint checks on changes.		
6.	EOC	In the Load Generator window: Click **Late Change** Select **Master Plan** Enter the **Start Date & Time** Click **Submit**		OTM section 8.10.1.2
7.	EOC	Verify a new ATC has been generated.		
8.	EOC	View the Ground Schedule to verify it reflects the changes.	ATC loads generated for subsequent DAS have been removed from the system.	
9.	EOC	Regenerate an ATC load that was removed (at least one).		
10.	EOC	Schedule additional communication contacts		

Step	Station	Action	Expected Results	Comments
11.				

Test Termination:

Step	Station	Action	Expected Results	Comment
1.	EOC	Collect all necessary screen snaps, dumps, etc. needed for post-test analysis and verification. Save Event_Display to file Evtdis_'DOY'.eoc3.		
2.	EOC	Take down the FOS user workstation in accordance with OTM section 4.3	FOS user workstation is down	
3.	EOC	If necessary, take down the real time server and data servers in accordance with OTM section 4.3	Servers are down	

Appendix A: Test Package Requirements Summary

Requirement	Description	Test Case (s)
AM1-0270#B	The AM-1 SDVF shall have the capability to send and the ECS shall have the capability to receive AM-1 SCC flight software updates.	EOC3.7
EOC-1005#B	The EOC shall provide the IMS with spacecraft information, including at a minimum orbit information, for use in DAR generation.	EOC3.2
EOC-2010#B	The EOC shall accept from the FDF planning and scheduling information for the EOS spacecraft and instruments, which includes, at a minimum, the following: a. Predicted orbit data including predicted ground track b. EOS spacecraft UAV data c. PSATs d. Spacecraft maneuver information	EOC3.2
EOC-2030#B	The EOC shall store and maintain EOS planning and scheduling information, which includes, at a minimum, the following: c. Predicted availability of the spacecraft resources d. Baseline activity profile for each applicable instrument e. Planning and scheduling information received from the FDF f. Preliminary resource schedules, including TDRSS contact times g. Detailed activity schedules, including TDRSS contact times	EOC3.2, EOC3.3, EOC3.4, EOC3.5, EOC3.8, EOC3.9
EOC-2070#B	The EOC shall provide the capability to generate a spacecraft subsystem resource profile, based, at a minimum, on the following: a. Spacecraft orbit maintenance needs b. Spacecraft navigation needs c. Spacecraft subsystem maintenance needs	EOC3.3, EOC3.4, EOC3.5, EOC 3.8
EOC-2160#B	The EOC shall provide plans and schedules to the IMS.	EOC3.9
EOC-2170#B	The EOC shall be capable of planning and scheduling observations for which time may be specified in fixed or variable terms.	EOC3.3, EOC3.4, EOC3.5, EOC3.8, EOC3.9
EOC-2180#B	The EOC shall be capable of planning and scheduling observations for those EOS instruments whose operations may be periodic, intermittent, or continuous.	EOC3.3, EOC3.4, EOC3.5, EOC3.8, EOC3.9
EOC-2190#B	The EOC shall be capable of planning and scheduling coordinated observations involving multiple instruments.	EOC3.3, EOC3.4, EOC3.5, EOC3.8, EOC3.9
EOC-2200#B	The EOC shall plan and schedule the management of spacecraft resources that include, at a minimum, the following: a. Spacecraft recorder b. Communications subsystems c. Thermal and power subsystems d. SCC-stored command table.	EOC3.3, EOC3.4, EOC3.5, EOC3.8, EOC3.9
EOC-2210#B	The EOC shall have the capability to generate plans and schedules in both human readable and machine usable forms.	EOC3.3, EOC3.4, EOC3.5, EOC3.8, EOC3.9

Requirement	Description	Test Case (s)
EOC-2220#B	The EOC shall identify and resolve conflicts based on, at a minimum, the following: a. Resources needed for each observation or instrument support activity b. Resources needed for each spacecraft subsystem activity, if applicable c. Inter-instrument dependency d. In situ observation dependency e. Priorities set by the LTSP	EOC3.3, EOC3.4, EOC3.5, EOC3.8, EOC3.9
EOC-2240#B	The EOC shall reintroduce applicable requested activities in its planning and scheduling function when the activity did not occur due to a deviation from the schedule.	EOC3.3, EOC3.4, EOC3.5, EOC3.8, EOC3.9
EOC-2250#B	The EOC shall be capable of performing its planning and scheduling function in batch and incremental interactive-user modes.	EOC3.8
EOC-2260#B	The EOC shall provide "what-if" capabilities for planning and scheduling analysis, and provide them to authorized users, including the ICCs.	EOC3.5, EOC3.6
EOC-2270#B	The EOC shall accept an instrument resource profile or instrument resource deviation list (when a resource profile exists for the instrument) from each ICC.	EOC3.3
EOC-2272#B	For the instruments that have resource deviations lists, the EOC shall build instrument resource profiles by combining the resource deviation lists with the respective baseline resource profiles.	EOC3.3
EOC-2280#B	At least once each week, the EOC shall generate for each spacecraft a preliminary resource schedule that describes all operations currently planned for the following target week.	EOC3.4, EOC3.5, EOC3.8
EOC-2290#B	Whenever the ICC's instrument resource profile cannot be integrated into a preliminary resource schedule, the EOC shall provide the ICC with a notification that includes, at a minimum, an identification of the conflicting activities and the source of conflict.	EOC3.4, EOC3.5, EOC3.8
EOC-2300#B	The EOC shall build or update the preliminary resource schedule based on the following, at a minimum: a. Existing preliminary resource schedules, if any b. Instrument resource profiles c. Spacecraft subsystems resource profile d. Science guidelines e. Spacecraft operations constraints f. TDRSS schedule	EOC3.4, EOC3.5, EOC3.8
EOC-2310#B	The EOC shall build a preliminary resource schedule by performing the following: a. Integrating the spacecraft subsystems resource profile and individual instrument resource profiles b. Determining if required resources, including SN resources, are within limits c. Using guidelines established by the LTSP d. Resolving conflicts between the proposed activities	EOC3.4, EOC3.5, EOC3.8
EOC-2320#B	The preliminary resource schedule shall include, at a minimum, the following: a. Activity or DAR identifiers b. Resource availability and usage requirements c. Time constraints and alternatives for planned activities d. TDRSS schedule	EOC3.4, EOC3.5, EOC3.8
EOC-2350#B	The EOC shall provide the preliminary resource schedule to the ICCs upon generation.	EOC3.4, EOC3.5, EOC3.8, EOC3.9

Requirement	Description	Test Case (s)
EOC-2370#B	The EOC shall generate TDRSS schedule requests based on the data rate profiles of all the instruments and spacecraft subsystems.	EOC3.8
EOC-2400#B	The EOC shall submit the TDRSS schedule requests to the NCC.	EOC3.8
EOC-2405#B	The EOC shall accept the forecast TDRSS schedule from the NCC.	EOC3.8
EOC-2410#B	The EOC shall accept from the NCC notification of rejection along with the reason for rejection, when all or a portion of the TDRSS schedule request cannot be accommodated.	EOC3.8
EOC-2420#B	In response to the rejection of a TDRSS schedule request, the EOC shall have the capability to modify the request for resubmission to the NCC.	EOC3.8
EOC-2460#B	The EOC shall be capable of generating or updating a spacecraft subsystem activity list based on at a minimum the following: a. Existing detailed activity schedule b. Preliminary resource schedule c. Spacecraft subsystem activities identified after the preliminary resource schedule has been generated d. Current predicted orbit data and related information e. Responses to emergency/contingency situations	EOC3.3
EOC-2480#B	The EOC shall accept from each ICC an instrument activity list or an instrument activity deviation list (when an activity profile exists for the instrument) and any updates thereto.	EOC3.3, EOC3.5
EOC-2482#B	For the instruments that have instrument activity deviation lists, the EOC shall build the instrument activity lists by combining the instrument activity deviation lists with the respective baseline activity profiles.	EOC3.3
EOC-2490#B	For each day the EOC shall be capable of generating or updating a detailed activity schedule for each spacecraft and its instruments, nominally covering the next 7 days.	EOC3.9
EOC-2510#B	The EOC shall generate a detailed activity schedule for the spacecraft and its instruments by: a. Integrating the spacecraft subsystem activity list and individual instrument activity lists b. Determining if the aggregate resource requirements are within limits d. Ensuring that all the sequencing constraints among the proposed activities are respected e. Scheduling the spacecraft recorder, direct downlink, and communication subsystem operations	EOC3.9
EOC-2520#B	If additional TDRSS schedule needs are identified while generating or updating a detailed activity schedule, the EOC shall make a request to the NCC for additional TDRSS services.	EOC3.9, EOC3.10
EOC-2530#B	If the request to the NCC for additional SN services is denied, the EOC shall regenerate or modify a detailed activity schedule to account for the TDRSS service availability constraints.	EOC3.9, EOC3.10
EOC-2540#B	The EOC shall notify the ICC of any instrument activities that cannot be integrated into a detailed activity schedule.	EOC3.4, EOC3.5, EOC3.8 EOC3.9, EOC3.10
EOC-2550#B	The detailed activity schedule shall include, at a minimum, the following: a. Instrument activities b. Spacecraft activities necessary to support all instrument activities c. Spacecraft activities necessary for the spacecraft subsystem maintenance d. Spacecraft resource requirements for each activity e. Traceability of instrument activities to DARs	EOC3.9
EOC-2555#B	The EOC shall evaluate the impact of a TOO observation, , or a change to a scheduled observation, on other previously scheduled activities.	EOC3.10

Requirement	Description	Test Case (s)
EOC-2570#B	In support of a TOO observation or late change, the EOC shall update the detailed activity schedule within 1 hour after receipt of the update to the corresponding instrument activity list or the instrument activity deviation list (when an activity profile exists for the instrument), if the update does not affect existing detailed activity schedule events or create new conflicts.	EOC3.10
EOC-2590#B	In support of a TOO observation or a late change, the EOC shall update the detailed activity schedule within 10 hours after the receipt of the update of the corresponding instrument activity list (or instrument activity deviation list), if the update affects existing detailed activity schedule events or creates new conflicts.	EOC3.10
EOC-2620#B	The EOC shall provide the ICC with the detailed activity schedule and any updates upon generation.	EOC3.9, EOC3.10
EOC-3015#B	The EOC shall accept SCC flight software updates from the SDVF.	EOC3.7
EOC-3017#B	The EOC shall accept from the FDF parameters necessary for spacecraft command data generation, including the following: a. Navigational operations parameters b. Spacecraft maneuver parameters	EOC3.2
EOC-3020#B	The EOC shall accept from the ICC instrument loads, SCC-stored instrument commands, and SCC-stored instrument tables as well as the associated information that includes at a minimum the following: a. Instrument identifier b. Schedule identifier, if applicable c. Identification of commands that could impact spacecraft or instrument safety (i.e., critical commands)	EOC3.7
EOC-3024#B	The EOC shall validate the expected resource usage.	EOC3.4
EOC-3030#B	The EOC shall authenticate the originator of command information from the ICCs.	EOC3.7
EOC-3050#B	At least once per day, the EOC shall generate SCC-stored spacecraft commands and SCC-stored spacecraft tables based on the detailed activity schedule.	EOC3.7, EOC3.9
EOC-3070#B	The EOC shall generate SCC-stored spacecraft commands and SCC-stored spacecraft tables for 24 hours of spacecraft operations in less than 1 hour.	EOC3.7, EOC3.9
EOC-3086#B	The EOC shall generate a command-to-memory location map for SCC-stored command loads.	EOC3.7, EOC3.9
EOC-3090#B	As frequently as necessitated by the detailed activity schedule, the EOC shall build a spacecraft and instrument memory load, which includes as many of the following as needed: a. SCC-stored spacecraft and instrument commands b. SCC-stored spacecraft and instrument tables c. Instrument loads d. SCC software updates.	EOC3.7
EOC-3160#B	The EOC shall generate operational reports including, at a minimum, the following: a. SCC-stored command load report b. Integrated report having orbital events, command execution times, and TDRS contacts with candidate loads.	EOC3.7, EOC3.9
EOC-3200#B	The EOC shall accept from the ICC instrument preplanned command groups for issuance by the EOC in the event of an anomaly that requires an immediate response or in the event that the ICC is unable to command the instrument.	EOC3.7, EOC3.9
EOC-3210#B	The EOC shall store and maintain preplanned instrument commands for all instruments on the spacecraft.	EOC3.7, EOC3.9

Requirement	Description	Test Case (s)
EOC-3225#B	In support of a TOO observation or late change, the EOC shall prepare the corresponding integrated load and/or real-time instrument command set within 15 minutes of receipt of the SCC-stored instrument commands, SCC-stored instrument tables, or instrument load from the ICC, if the observation does not impact previously scheduled activities.	EOC3.10
EOC-3226#B	In support of a TOO observation or late change, the EOC shall prepare the corresponding integrated load and/or real-time instrument command set within 1 hour of receipt of the SCC-stored instrument commands, SCC-stored instrument tables, or instrument load from the ICC, if the observation impacts previously scheduled activities.	EOC3.10
EOC-3240#B	The EOC shall be capable of producing spacecraft and instrument memory loads covering 24 hours of spacecraft operation in less than 1 hour.	EOC3.7, EOC3.9
EOC-4010#B	For each spacecraft and its instruments, the EOC shall prepare uplink data that conform to the CCSDS Telecommand Standard.	EOC3.7, EOC3.9
EOSD1520#B	ECS elements shall receive TDRSS schedules from the Network Control Center (NCC).	EOC3.8
EOSD1530#B	ECS elements shall submit TDRSS schedule requests to the NCC.	EOC3.8
ICC-2350#B	In support of a TOO observation or a late change, the ICC shall update the instrument activity list or the instrument activity deviation list (when an activity profile exists for the instrument) within 8 hours, if the corresponding observation or the late change affects existing instrument activities or creates new conflicts.	EOC3.10
ICC-2370#B	In support of a TOO observation, the ICC shall update the instrument activity list or the instrument activity deviation list (when an activity profile exists for the instrument) within 30 minutes, if the corresponding observation or the late change does not affect existing instrument activities or create new conflicts.	EOC3.10
ICC-2380#B	In support of a late change, the ICC shall be capable of updating the instrument activity list within 75 minutes, if the request for instrument support activity does not affect existing instrument activity list events or create new conflicts.	EOC3.10
ICC-3070#B	In support of a TOO observation or late change, the ICC shall generate and validate the corresponding commands within 25 minutes of receiving an updated detailed activity schedule from the EOC, if the corresponding observation does not impact previously scheduled activities.	EOC3.10
ICC-3071#B	In support of a TOO observation, the ICC shall be capable of generating and validating the corresponding commands within 55 minutes of receiving an updated detailed activity schedule from the EOC, if the corresponding observation impacts previously scheduled activities.	EOC3.10
ICC-3085#B	In support of a late change, the ICC shall be capable of generating and validating the corresponding commands within 115 minutes of receiving an updated detailed activity schedule from the EOC, if the corresponding observation impacts previously scheduled activities.	EOC3.10
EOC-0030#B	The EOC shall receive the LTSP and LTIP from the SMC.	Not Testable
EOC-2020#B	The EOC shall generate the long term spacecraft operations plan, based upon, at a minimum, the following: a. LTSP from the IWG. b. LTIP from the IWG. c. Spacecraft maneuvers and other spacecraft activities that have potential to impact mission operations	Not Testable

Requirement	Description	Test Case (s)
EOC-2030#B	The EOC shall store and maintain EOS planning and scheduling information, which includes, at a minimum, the following: a. IWG science guidelines, as specified in the LTSP and LTIP b. Long term spacecraft operations plan	Not Testable

EOC3 Appendix C

Step	

EOC3.3 step 4	New Activity Name:**EOC33_ASTER_ACT_1_FR**
	Resource Name:**AM1 ASTER**
	Activity Type:**Standard**
	     ATC: AST_TURN_ON_C_TDP
	        Start -00:00:05
	     ATC: AST_ENABLE_SVH
	        Start +00:00:10
	     ATC START +00:02:00 AST_TURN_ON_C_SQL
	        Note: Noexist rule hard constraint, AST_TURN_OFF_C_SQL cannot be in same command list. Also Comment rule "The sequal C drive is turned on.".
	     GND: AST_TURN_ON_MPS
	        Stop -00:00:10
	     GND: AST_TURN_OFF_C_TDP
	        Stop +00:00:05
	
	New Activity Name:**EOC33_ASTER_ACT_2PART1_FR**
	Resource Name:**AM1 ASTER**
	Activity Type:**Standard**
	    ATC START +00:00:00 AST_TURN_ON_S_TC
	      Note: Post rule hard constraint, AST_TURN_ON_T_SCAN must be sent within 30-45 minutes.
	    ATC START +00:00:00 AST_TURN_ON_T_STBY
	      Note: Post rule hard constraint, AST_TURN_ON_V_MAIN must be sent within 13-15 minutes.
	    ATC START +00:14:00 AST_TURN_ON_V_MAIN
	
	New Activity Name:**EOC33_ASTER_ACT_2PART2_FR**
	Resource Name:**AM1 ASTER**
	Activity Type:**Standard**
	    ATC START -00:05:00 AST_TURN_ON_T_CLR
	    ATC START +00:00:00 AST_TURN_ON_T_SCAN
	      Note: Post rule hard constraint, AST_TURN_ON_T_SCAN must be sent within 30-45 minutes ofAST_TURN_ON_S_TC (EOC33_ASTER_ACT_2PART1_FR)
	
	New Activity Name:**EOC33_CERESF_ACT_1_FR**
	Resource Name:**AM1 CERES FORE**
	Activity Type:**Standard**
	     ATC: CEF_TURN_ON_OPS_A
	        Start -00:05:00
	     ATC: CEF_TURN_OFF_OPS_A
	        Start +00:03:00

Step	

	ATC: CEF_TURN_ON_SURV_A
	        Stop -00:03:00
	ATC: CEF_TURN_OFF_SURV_A
	        Stop +00:05:00
	Mode Transition: Standby
	        Start +00:00:30
	
	New Activity Name:**EOC33_CERESF_ACT_1_FR**
	Resource Name:**AM1 CERES FORE**
	Activity Type:**Standard**
	        ATC: CEF_TURN_ON_OPS_A
	                Start -00:10:00
	        ATC: CEF_TURN_OFF_OPS_A
	                Start +00:03:00
	        ATC: CEF_TURN_ON_SURV_A
	                Stop -00:03:00
	        ATC: CEF_TURN_OFF_SURV_A
	                Stop +00:10:00
	
	New Activity Name:**EOC33_MISR_ACT_1_FR**
	Resource Name:**AM1 MISR**
	Activity Type:**Standard**
	        GND: MIS_TURN_ON_INSTR
	                Start -00:01:00
	        GND: MIS_OPEN_COVER
	                Start -00:02:00
	        GND: MIS_CLOSE_COVER
	                Stop +00:02:00
	        GND: MIS_USE_IMOK
	                Stop +00:01:00
	        ECL Directive: WAIT
	                Start +00:05:00
	
	New Activity Name:**EOC33_MODIS_ACT_1_FR**
	Resource Name:**AM1 MODIS**
	Activity Type:**Standard**
	        ATC: MOD_TURN_ON_BBB
	                Start -00:00:00 (will change to Start +00:00:00 in the Selected Commands
	portion of the Commands window)
	        ATC: MOD_TURN_ON_BBA
	                Start +00:01:00
	        GND: MOD_TURN_OFF_RCCSHTR
	                Stop -00:01:00
	        GND: MOD_TURN_ON_CPB
	                Stop +00:00:00
	        Mode Transition: Science Day
	                Start -00:05:00

Step	
	ECL Directive: WAIT
	Stop -00:00:30
	Complex Activity:
	EOC_CERESF_ACT_1_FR
	Start +00:10:00
	Procedure: proc1
	Start +00:05:00
	New Activity Name:**EOC33_MODIS_ACT_2_FR**
	Resource Name:**AM1 MODIS**
	Activity Type:**Standard**
	ATC START -00:01:00 MOD_ENABLE_CPA_EPWRT
	Note: Offset rule soft constraint, No commands prior to for 0:30.
	ATC START +00:01:00 MOD_TURN_ON_BBA
	ATC START +00:01:30 MOD_DISABLE_CP_EPWRT
	note: Offset rule hard constraint, No commands afterwards for 1:30.
	ATC STOP +00:01:00 MOD_ENABLE_PS2_SVHTR
	note: Offset rule soft constraint, No commands afterwards for 1:30.
	New Activity Name:**EOC33_MOPITT_ACT_1_FR**
	Resource Name:**AM1 MOPITT**
	Activity Type:**Standard**
	ATC: MOP_ENABLE_LAUNCH_A
	Start -00:00:30
	ATC: MOP_RESET_COMPUTER
	Start -00:00:30
	ATC: MOP_SELECT_PROM_A
	Start -00:00:30
	ATC: MOP_SET_RD_SPARE
	Start -00:00:30
	ATC: MOP_TURN_ON_MPSU_A
	Start -00:00:30
	ATC: MOP_TURN_OFF_MPSU_A
	Start -00:00:30
	ATC: MOP_TURN_ON_SIDE_B
	Start -00:00:30
	ATC: MOP_TURN_OFF_SIDE_B
	Start -00:00:30
	GND: MOP_TURN_ON_SPSU_B
	Stop +00:00:00
	GND: MOP_TURN_OFF_SPSU_B
	Stop +00:00:10
	GND: MOP_TURN_ON_MPSU_A
	Stop +00:00:20
	GND: MOP_TURN_OFF_MPSU_A
	Stop +00:00:30
	GND: MOP_TURN_ON_SIDE_A

Step	
	Stop +00:00:40
	GND: MOP_TURN_OFF_SIDE_A
	Stop +00:00:50
	GND: MOP_TURN_ON_SPSU_A
	Stop +00:01:00
	GND: MOP_TURN_OFF_SPSU_A
	Stop +00:01:10

EOC3.3 step 5	New Activity Name:**EOC33_CDH_ACT_1_FR**
	Resource Name:**AM1 Command & Data Handling**
	Activity Type:**Standard**
	    ATC START -00:00:05 CDH_ENABLE_CT1RCSR1
	    ATC START +00:00:10 CDH_GET_CT1_RAM_CRC
	        Edit parameters
	        STARTING ADDRESS=50
	        CRC_VALUE=65536
	        WORD_COUNT=50000
	    GND: CDH_ENABLE_CT1_OK
	        Stop -00:00:10
	    GND: CDH_TURN_OFF_SCC1
	        Stop +00:00:05
	
	New Activity Name:**EOC33_COM_ACT_1_FR**
	Resource Name:**AM1 Communications**
	Activity Type:**TDRSS Contact**
	NCC Config Code:
	    ATC: COM_SELECT_HGA_TX
	        Start -00:05:00
	    ATC: COM_SELECT_HGA_TX1
	        Start +00:03:00
	    ATC: COM_STEP_HGA_AZ
	        Stop -00:03:00
	    ATC: COM_TURN_ON_SSPA1
	        Stop +00:05:00
	
	New Activity Name:**EOC33_EAS_ACT_1_FR**
	Resource Name:**AM1 Electrical Accommodation Subsystem**
	Activity Type:**Standard**
	    GND: EAS_ENABLE_NEA_BUSB
	        Start -00:01:00
	    GND: EAS_ARM_HGA_BOX1A
	        Start -00:02:00
	    GND: EAS_FIRE_HGA_BOX1A
	        Stop +00:02:00
	    GND: EAS_DISABLE_NEA_BUSB
	        Stop +00:01:00
	    ECL Directive: WAIT

Step	
	Start +00:05:00

New Activity Name:**EOC33_EPS_ACT_1_FR**
Resource Name:**AM1 Power Subsystem**
Activity Type:**Standard**

      ATC: EPS_SELECT_ADEA_FWD
          Start -00:00:00 (will change to Start +00:00:00 in the Selected Commands portion of the Commands window)

      ATC: EPS_SET_ADEA_RATEADJ
          Start +00:01:00
          Edit parameter ADJUSTMENT=-300 (will get error message) then ADJUSTMENT=-100

      GND: EPS_ENABLE_ADEB_SAFE
          Stop -00:01:00

      GND: EPS_TURN_ON_CMDDECB
          Stop +00:00:00

      ECL Directive: WAIT
          Stop -00:00:30

      Complex Activity:
          EOC_EAS_ACT_1_FR
          Start +00:10:00

      Procedure: proc2
          Start +00:05:00

New Activity Name:**EOC33_GNC_ACT_1_FR**
Resource Name:**AM1 GuidanceNav & Control**
Activity Type:**Standard**

      ATC: GNC_ENABLE_CSM_TO_A
          Start +00:00:30

      ATC: GNC_TURN_ON_ACEA
          Start +00:00:30

      ATC: GNC_TURN_ON_ACEA_SM
          Start +00:00:30

      ATC: GNC_SELECT_SHPB_MODE
          Start +00:00:30

      ATC: GNC_RESET_IRUPOS_B
          Start +00:00:30

      ATC: GNC_SET_TAM_X_BIA
          Start +00:00:30

      ATC: GNC_SET_TAM_Y_BIA
          Start +00:00:30

      ATC: GNC_SET_TAM_Z_BIA
          Start +00:00:30

      GND: GNC_TURN_ON_ZMTRB
          Stop -00:01:10

      GND: GNC_ENABLE_TAM2A
          Stop -00:01:00

Step	

	GND: GNC_TURN_ON_IRU_A
	    Stop -00:00:50
	GND: GNC_TURN_OFF_IRU_A
	    Stop -00:00:40
	GND: GNC_DUMP_ST1BLOCK
	    Stop -00:00:30
	GND: GNC_SET_TORQ_X_BIB
	    Stop -00:00:20
	GND: GNC_SET_TORQ_Y_BIB
	    Stop -00:00:10
	GND: GNC_SET_TORQ_Z_BIB
	    Stop -00:00:00 (will change to Stop +00:00:00 in the Selected Commands portion of the Commands window)
	
	New Activity Name:**EOC33_PMS_ACT_1_FR**
	Resource Name:**AM1 Propulsion**
	Activity Type:**Standard**
	    ATC: PMS_TURN_ON_EPC1
	        Start +01:00:00
	    ATC: PMS_TURN_OFF_EPC1
	        Stop -01:00:00
	
	New Activity Name:**EOC33_TCS_ACT_1_FR**
	Resource Name:**AM1 Thermal Control**
	Activity Type:**Standard**
	    GND: TCS_SET_PBATPWMB
	        Start +00:30:00
	    GND: TCS_ENABLE_BBATHG1A
	        Stop -00:30:00

EOC3.3 Constraint Definitions

Constraint Name	Left Resource	Activity/ Mode/Event	Option	soft/ hard	Type	Period	Right Resource	Activity/ Mode/Event	Option	Description